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29

New Games
Reviewed

Never buy a bad
game again!

NEXT GENERATION

The world's #1 computer and videogame authority

June 1997

The new face of graphic adventures

Sierra's innovative 3D

game could revolutionize

interactive storytelling

Exclusive

Doom designer John
Romero has plans for
your spare time

Revealed

Why software companies
charge you so much for games

In basing *King's Quest: Mask of Eternity* on one of Sierra's 3D game engines, designer Roberta Williams is taking a chance. It could do for adventure what *Command and Conquer* did for real-time strategy. Then again, her faithful audience might reject a 3D world. Page 68

volume three

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The Tokyo Game Show: We were there, and we bring the first exclusive report back to the U.S.



Expand your horizons

Gaming's transformation from 2D to 3D is almost complete. Having thrown off the shackles of 16-bit, 1997's game designers seem ever more reluctant to forsake the "freedom" that 32-bit and 64-bit graphics technology offers. And this means that more and more game genres are adapting to fit into cutting-edge 3D environments.

Usually, this works just fine: *Doom* and its myriad clones have replaced the top to bottom shoot 'em ups of old; *Mario* and *Sonic*, both icons of 16-bit side-scrolling gameplay, have confidently leaped into the third dimension; *Virtua Fighter* has wrestled the heavyweight championship from *Street Fighter*; and *Tomb Raider*, the surprise hit of 1996, wowed gamers around the world by applying to a lush, 3D world gameplay elements borrowed from a 2D classic (in this case, *Prince of Persia*).

But for many genres 3D simply isn't appropriate — and 2D remains the way to offer the best gaming experience. Puzzle games (*Tetris*, *Puzzle Fighter*, *Baku Baku*) is one such genre. Real-time strategy (*Command & Conquer*, *WarCraft II*) is a second. And — many people thought — graphic adventures were a third.

But Sierra thinks differently. Sierra believes that *King's Quest: Mask of Eternity* can combine the sophistication and subtlety of a 2D, pre-rendered, scene-based game with the realism of a 3D world to create the ultimate immersive experience.

The exclusive Next Generation report begins on page 72.

June 1997

Contact

Next Generation

Imagine Publishing, Inc.
150 North Hill Drive
Brisbane CA 94005

Advertising 415. 468. 4684

Editorial 415. 468. 4684

(E-mail: ngonline@imagine-inc.com)

FAX 415. 468. 4686

If you have questions about a subscription, please contact us at:
Customer Service 415. 468. 2500
Customer Service fax 415. 656. 2486
E-mail: subscribe@next-generation.com

Editorial

Neil West Neil? Has anyone seen Neil?

Diane Anderson managing editor

Chris Charla stoa

Patrick Baggatta features editor

Jeff Lundrigan reviews editor

Tom Russo associate editor

Mike Wilmoth senior art director

Richard Szeto bombberman

Colin Campbell editor, on online

Christian Svensson new media editor

Dan Eggers assistant on online editor

Jason Michaels disc editor

Editorial Contributors

Jason Bates, **Roger Burchill**, **Jeff Chen**,
Nicolas di Costanzo, **Jason Montes**, **Douglas Perry**, **Mike Salmon**, **Adam Douglas**, **Todd Vaughn**, **Marcus Webb**, **Mike Wolf**

Photography & Artistic Contributors

Jude Edginton, **Emil Yanos**, **Gerard Serrano**

Advertising

Doug Faust associate publisher

Kathryn Herrick account executive

Kim Hansen ad coordinator

Larae Brown marketing

Production

Richard Lesovoy production director

Mark Eastwood production coordinator

Imagine Publishing, Inc.

Jonathan Simpson-Bint vp/pub director

Tom Hale director CD-ROM publishing

Eric Marcoulie web director

Bruce Eldridge newsstand director

Thea Selby newsstand manager

Terry Lawson newsstand analyst

Holly Klingler vp circulation

Gail Egbert circulation consultant

Kate Bailey circulation manager

Jane Jarvis fulfillment manager

Brian Hostettler hardware hero

Tom Valentino vice president/CEO

Chris Anderson president

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International Licensing Representative

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Printed in the USA. Next Generation shares editorial with the U.K.-based magazine *EDGE* and is not affiliated with NoXT Software, Inc. Unsolicited manuscripts cannot be returned or acknowledged. And, Neil and Rich rode away on their majestic cheetah

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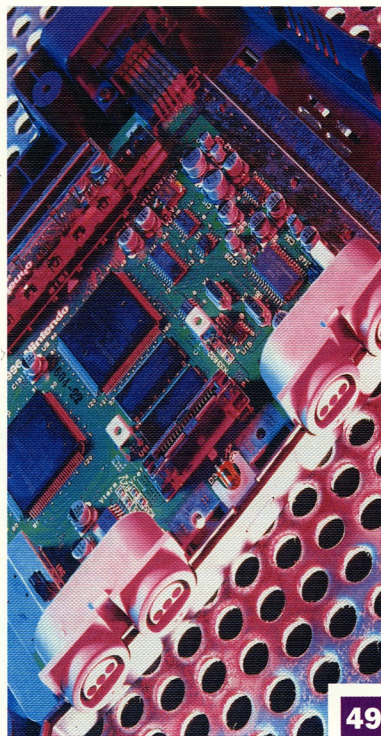
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Does John Romero still enjoy shooting people?

He's got a new company, a new attitude toward game design, and a new business strategy. Find out why John Romero left Id, what's wrong with Quake, and what the future holds for the man who helped bring the word "imp" into popular usage



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Is your favorite game company ripping you off?

Sometimes the \$50 you spend on a game seems worth it. But not often enough. Many times, consumers finish games and simply feel cheated. Where does all the money go? Next Generation reports on why videogames cost so much

The state of play

There's a lot of untapped power in your console which today's games simply don't exploit. What is behind today's hardware? Are you getting the most out of it? Next Generation looks under the hood and discusses videogame hardware past and future



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He started at Id and now heads Ion Storm. An exclusive **Next Generation** interview

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Is your favorite game company ripping you off?

Are games worth it? A look at the cost of developing, producing, marketing, and distributing games

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The state of play

Next Generation examines the untapped power that's really behind your console and looks ahead at what the future holds for gaming.

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News and previews, updated daily. Plus the best discussion forums on the Internet, Q&A, and more

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Alphas

Previewed: *Mask of Eternity* (PC), *Ninja* (PlayStation, Saturn), *ONE* (PlayStation), *Spec Ops* (PC, PlayStation), *Reboot* (PlayStation), *Demon Isle* (PC). Plus, a sneak peak at *Heat*, an online service from SegaSoft

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Save cash and time

Subscribing could be the smartest thing you do

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Finals: 29 new games reviewed

Every month, **NG** reviews the major new game releases, so you know which ones are merely mediocre and which ones are nearly great

Can't we all
just get along?

NEOCORTEX

REPTILIAN
COMPLEX

WHAT MAKES US KILL:

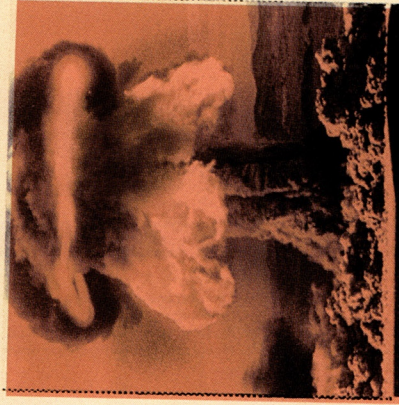
EVERY HUMAN BRAIN HAS A REPTILIAN COMPLEX, RESPONSIBLE FOR AGGRESSION, TERRITORIALITY AND SELF-PRESERVATION. CYBERDIVERSION THEORY SAYS WE SHOULD ACCEPT, NOT SUPPRESS, THESE PRIMAL INSTINCTS AND DIVERT THEM ONTO THE NET, WHERE THEY CAN'T HARM ANYONE... **HEAT IS THE ANSWER!!**

What you are about to read is the most important piece of information you will ever read! HEAT may appear to be an internet gaming network, but THIS IS NOT ABOUT COMPUTER GAMES, THIS IS ABOUT THE SURVIVAL OF

THE HUMAN SPECIES! Dr. D.G. Bartha's CYBERDIVERSION THEORY

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INSTINCTIVE! THE ANSWER IS NOT TO STOP KILLING; THE ANSWER IS TO CHANGE THE
WAY WE KILL--BY TAKING IT TO THE NET... **HEAT IS THE ANSWER!!****

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introducing

Next Generation Disc Contents

Do you want to know about games before they come out? Do you want to know what developers are working on? The Next Generation Disc Edition gives you all this and more

What's new about this disc? We've added the beginnings of what is to become the **Next Generation Disc Edition** standard. Come with us on interviews and get a closer look at the future of next-generation entertainment. This issue of the **Disc Edition** brings you three digital interviews, five import titles, and a record eight new Saturn titles. You can also expect more impressive changes premiering next month on the July **Disc**.

In addition, we've finished reading your responses to our online survey regarding the disc and are tailoring the **Disc Edition** format

to satiate your gaming desires. Your comments are of the utmost importance, and we appreciate your support and enthusiasm. You are welcome to write us at disceditors@next-generation.com

Without further adieu, please join us in checking out some games in development. Working in conjunction with design house Visual Concepts, ASC has a new game titled **ONE**. Read about **ONE** in the Alpha section on page 87 of the magazine and see our exclusive interview on the **Disc**. Also on the **Disc**, check out what's new from Cyclone Studios — *Requiem* and *Uprising* are two promising titles that are sure to impress.



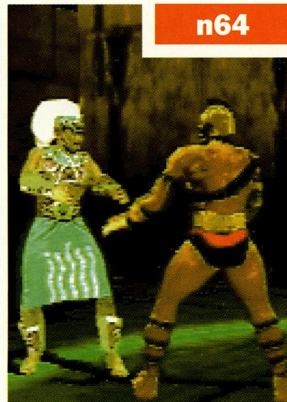
pc



talking

Talking

Talking is your opportunity to see and hear the people making news in the game industry. This month, the **Disc Edition** takes you behind closed doors at Cyclone Studios to check out *Uprising*, *Requiem*, and *ONE* in development. Three huge QuickTime movies await you on the **Disc**



n64



playstation

PlayStation, Sega Saturn, and N64 movies

Grab some popcorn and pull up a seat because we've got loads of movies: four new Nintendo 64 movies, 11 PlayStation movies, and eight Saturn movies. Happy viewing...

5 mac demos

Featuring:

Bubble Trouble 1.0.1 (Ambrosia), *Command & Conquer* (Westwood), *Damage Incorporated* (MacSoft), *NetMech* (Activision), *The Jack NetShow* (Berkeley Systems)

6 pc demos

Featuring:

Descent To Undermountain (Interplay), *Hover Race* (Groksoft), *Front Page Sports Football Pro '97* (Sierra), *POD* (Ubisoft), *Scud* (Segasoft), *WAR, Inc.* (Interactive Magic)

2 internet software

Two Internet software packages:

America Online (Mac & PC), *The Palace 2.1* (Mac & PC)

3 talking

Visit Cyclone Studios: Featuring *Uprising* & *Requiem*
Visit ASC Games/Visual Concepts: Featuring *ONE*

5 imports

Bombberman, *Bushido Blade*, *Goal Storm '97*, *Victory Goal '97*, *Zap Snowboarding Tricks*

4 nintendo 64 movies

Featuring:

Blast Corps, *Turok: Dinosaur Hunter* (Disco Mode), *Turok: Dinosaur Hunter* (Pen & Ink Mode), *War Gods*

11 sony playstation movies

Featuring:

Brahma Force, *Grand Slam Baseball*, *K1 The Arena Fighters*, *NBA ShootOut '97*, *Over Blood*, *Rally Cross*, *The Need For Speed 2*, *Triple Play Baseball '98*, *VR Baseball '97*, *WCWVs*, *The World*, *Xenious 3D/GT*

8 sega saturn movies

Featuring:

Assault Suit Leynos 2, *Fire Pro Wrestling*, *Marx TT*, *SuperBike*, *Mass Destruction*, *MegaMan X4*, *Scorchers*, *The Crow*, *Warcraft 2*

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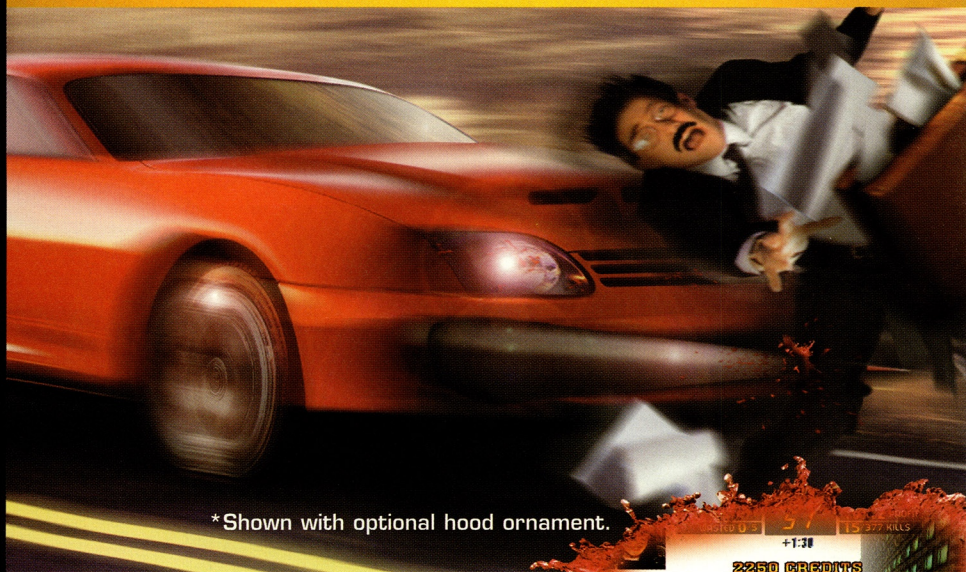
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it wipes clean in
a jiffy."*

Consumer Reports



*Shown with optional hood ornament.

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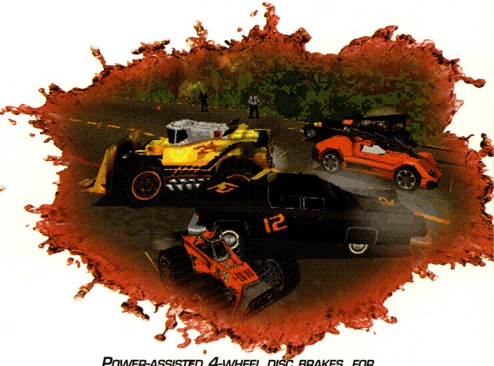
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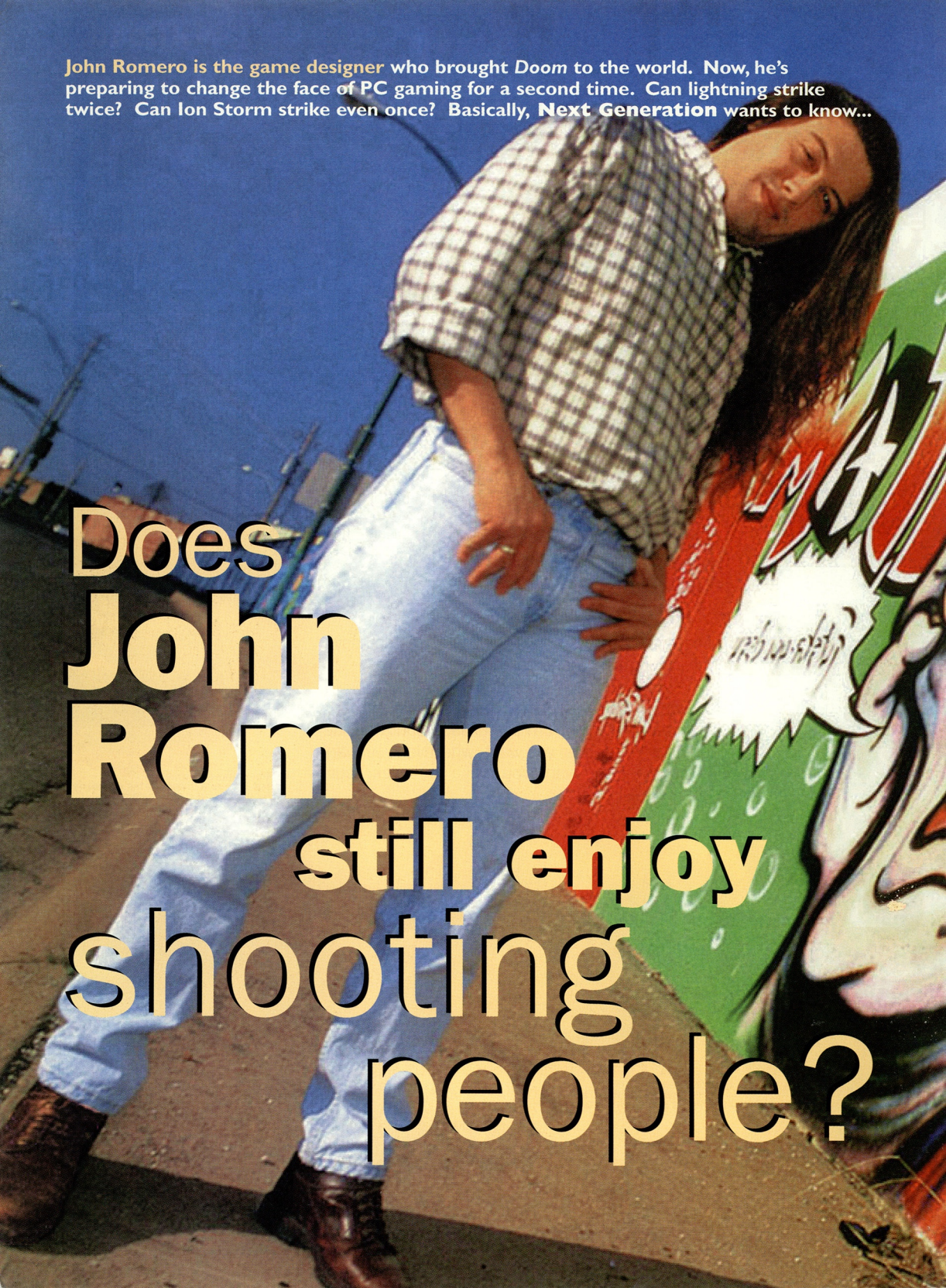
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John Romero is the game designer who brought Doom to the world. Now, he's preparing to change the face of PC gaming for a second time. Can lightning strike twice? Can Ion Storm strike even once? Basically, **Next Generation** wants to know...

A photograph of John Romero, a man with long dark hair, wearing a checkered button-down shirt and light blue jeans, leaning against a wall covered in colorful graffiti. He is smiling slightly and looking towards the camera. The background shows a clear blue sky and some distant structures.

Does
**John
Romero**
still enjoy
shooting
people?



PC game start-ups don't generally get much attention before they release their first title. Ion Storm is an exception. Headed by John Romero, co-founder of *Id* and co-designer of *Doom*, *Doom II*, and *Quake*, he's teamed again with Tom Hall, another *Id* alumnus.

In an age in which widespread 3D acceleration and ever-increasing processing power has turned much of PC gaming into mere technology demonstrations, Ion Storm plans to put emphasis on gameplay, without sacrificing story as *Id* often did. This is good news. This is what *Next Generation* likes to hear. We met with Romero in Texas to get the scoop on Ion Storm's story so far...

Back in the early 1980s...

NG: How did you first get into designing games?

John: I got into game design by programming first, after playing videogames for years and years. I got an Apple II back in 1980. I made clones of games that were out there already, like *Pac-Man* and *Defender* and *Asteroids*, but we didn't sell any.

I got my first job in the industry in 1987 at Origin Systems in New Hampshire, working on the port of the Apple II version of *2400 AD* to the Commodore 64. That was all on my own — they'd only just started creating project teams. I remember that there were

"I got my first job in the industry at Origin Systems in New Hampshire, working on the port of 2400 AD to the Commodore 64"

about four guys in another room porting the Apple version of *Ultima V* over to the PC.

NG: Do you miss those early days, before *Doom* changed everything?

John: I don't really miss 'em. They were fun, they were great days, but I'm having a lot of fun now, too. I never really thought about how successful I might become or not, all I cared about was making the games. Success or no, I just wanted to do it.

NG: How did you first meet the *Id* guys?

John: We were all at Softdisk in 1989 when I met Tom Hall. I came to Softdisk because Jay I Wilbur, who would go on to become *Id*'s Business Development Manager I was going there. I had known Jay since 1986, — he was the editor of an Apple II magazine that I was submitting my programs to.

I found out that he was going down, and I wanted to go with him. For about a year I was working on lots of stuff, but it wasn't very games-y, and I told them that I was going to leave if they didn't give me a game to work on. So they offered me a new project and I told them I needed another programmer, and they got John Carmack, who would go on to become creator of the *Doom* and *Quake* graphics engines. We were in our early twenties then.

NG: Apogee released *Id*'s earliest shareware ventures. What was the first title you worked on with them?

John: Well, we taught the guys there how to program properly, so they could do a fast platformer. A guy was working on a game called *Dark Ages*, back when we were still working at Softdisk, and he was drawing the graphics to the screen real slow — very inefficiently. We taught him how to do some tricks in EGA and the game turned out a lot faster, and that's why the early *Duke* games were so fast. We did our first *Commander Keen* series when we still working at Softdisk and then we released it as shareware on Dec 14, 1990. One month later we got our first royalty check and said, "Well, we don't need to work here anymore."

We officially started Id



"We did our first *Commander Keen* series when we were working at Softdisk. One month later we got our first royalty check"

Feb 1st, 1991 and did the second *Keen* series and then started working on *Wolfenstein*.

NG: Where did the idea for *Wolfenstein* come from?

John: We did a game called *Catacombs 3D*, which is on the *Id Anthology* now. It was an EGA texture-mapped 3D game, and we wanted to do a faster one to take advantage of VGA. We were going to make a game in which you broke into a research complex with all these mutants running around. It was going to be called *It's Green and Pissed*. But that just seemed to trite and hackneyed, and I'd always loved that old *Castle Wolfenstein* game on the Apple II, and so I said, "Hey, we could do it in 3D."

There's never been a game like it, really — I mean, you're shooting Nazis — it's pretty unique.

The game that changed all the rules

NG: *Wolfenstein 3D*, of course, led to *Doom*, which changed PC gaming forever. How much of a leap was it over your previous efforts?

John: It wasn't, really. It was set in a different world, and the important thing was to make sure it was original in concept and setting, compared to what was already out there. We wanted to create an environment that would let us to create some really cool monsters, and that's how we came up with the idea.

NG: Were you surprised at how successful it became?

John: Not at all. We totally knew it was going to be huge before it even came out, especially when we were planning on doing the network game. I remember saying, "This is going to be the biggest game in the history of the planet Earth" — those firefights, happening at that speed in 3D. I was just picturing

how much fun I was going to have playing it. We knew it was going to be huge, we just knew.

NG: So who did what on the *Doom* team? Did Carmack design the engine, and you the levels?

John: At the beginning, Tom Hall designed most of *Doom* and I was doing maps and a bit of

programming. Half way through we started to cut the design down to something that wasn't as complex as what Tom had created. He got kind of unhappy with that and left to go to Apogee. We continued and finished the game later in 1993.

NG: What was Tom's original vision?

John: He wanted four character classes, and

different nationalities, and it was really complex. Not as complex as *Ultima* or anything, but it would have been maybe a little over-designed for something that was essentially the first look at a new type of game.

We believed simplicity was essential.

NG: *Doom II* wasn't that much different from the original. In fact, it felt more like an expansion pack. Did you design much of that?

John: Well, Sandy Petersen designed most of the levels for *Doom II*, and then I designed a big bunch which took eight months. Then with *Quake*, I did about a fourth of the levels and the original design.

NG: *Quake* changed in concept quite a bit during development. Was your original design largely ignored? The single-player experience seemed a little weak...

John: Not ignored, but the finished game was off the mark. I had a great idea for how the game should go, and the engine wasn't finished for a long time and there was no proof of concept programming to see if the hammer idea would work right.

My original idea was to do something like *Virtua Fighter* in a 3D world, with full-contact fighting. But you'd also be able to run through a world, and do the same stuff you do in *Quake*, only when you got into these melees, the camera would pull out into a third-person perspective.

It would've been great, but nobody else had faith in trying it. The project was taking too long, and everybody just wanted to fall back on the safe thing — the formula. I wasn't going to go against everybody else in the company, so once I finished work on *Quake* I was done. I left the company.

NG: Was that the only reason why you left Id?

John: No, there were a whole bunch of reasons, but mostly it was creative differences. I wanted to do different games and take the action genre forward. I think that Id wasted its potential with this awesome technology. It only developed one title at a time. Id could've done a lot of great stuff with that engine.

I want to make a lot of really great games and not just one at a time, and not waste potential like that.



The skyscraper houses Ion Storm's headquarters in Dallas, Texas

The other guys at Id just wanted to stay small and concentrate on being small. I want to create games that require a lot of people to create.

NG: How happy were you with the final *Quake*?

John: It was a great game, don't get me wrong. I loved *Quake*; it was totally fun. It could have been a lot better, but that's fine, because usually the first generation of a product from Id is pretty bare — it's just there to show and test the technology, and the second version usually has a lot more depth to it.

Quake's single-player experience isn't that great, though, because what you get isn't intriguing enough to keep you going. In the first episode, you see pretty much all the monsters, except maybe four, and you see all the weapons, just about, and all the artifacts, so when you get to the second, third, and fourth episodes, all you're seeing are new levels, and that's just not enough. It was enough for *Doom*, back in those days, but nowadays, you need a lot more content to keep people going through your stuff and that's what my new games are all about.

NG: Was it hard to leave Id, this company that you'd helped to create with so many friends?

John: It was hard, but I had been talking about leaving for about eight months with Tom Hall. We were close, and we had a lot of fun. He's hugely creative. Back at Id, I was kind of alone, because Tom was at 3D Realms; he used to come up with some great design ideas, and I really missed that. I want to have fun. The money and everything is great, but it's more important for me to be doing what I think is great instead of just pumping out the same formula.

Into the Ion Storm

NG: Your new company is Ion Storm. How did you come up with the name?

John: Tom came up with the name Ion Storm because we wanted something really tight and small and cool and kind of scientific. He came up with a bunch of words and "ion" was the one that really stood out and "storm" came from an e-mail in which I was talking about Ion designer I Todd Porter's game, which is like a real-time strategy game, much like Blizzard's games.

NG: How come you ended up with Eidos as your publisher?

John: At the very beginning, before I did any deals with anyone, my whole thing was, "Look, I'm doing the games I want to do and nobody's going to tell me what to do with them." Everybody got that same line when I was going to all the companies.

Usually when somebody goes shopping for a distribution deal, they have to have like a design document or something that says what the game's going to be like so the company can look at it and go,

"Mmm, well this is interesting."

We had no design docs; we just went out and flew around for months telling the companies, "This is what we're going to do and we're looking for a publisher. We have lots of experience and good track records. Are you

interested or not?" There you go.

NG: There was speculation that you would go with GT Interactive. Was this ever a possibility?

John: GT? Why would we go with those guys? I wouldn't go with GT because it's kind of

"We had no design docs; we just went out and flew around for months telling the companies, 'This is what we're going to do' "

a "bad for the industry—" type company because they just went in with this complete business plan of buying up companies, inflating the stock price, taking a big pay off, and, you know... It's just a big money deal to them — it's not because they care about games, and I don't want to be associated with a company that doesn't care

about games or quality.

NG: So are you excited?

John: I'm really excited, because I have three games in development at the same time at Ion Storm. Having three game designers each designing an individual game, is a pretty big deal, I think. We don't have any technology guys in house — it's all about designing the games, and we'll license in whatever technology we need to get the games done. I mean look at *Tetris* — *Tetris* has horrible technology, but the game design is amazing, and that's what made it work.

Three brand new games

NG: Who are the other two top game designers?

John: Tom Hall and Todd Porter.

NG: We know that Tom Hall used to work with you back at Id, and then he spent some time with Apogee before joining Ion Storm. But where did Todd come from?

John: Todd came here from Seventh Level. He's been in the industry for 18 years and he's great friends with Chris Roberts of *Wing Commander* fame. He was an insider guy at Origin for years and years.

NG: So what's his game going to be?

John: His is cool. It's a real-time strategy game, but it's an adventure too. You don't just command units to destroy each other. The way you get through this cool adventure is by commanding things. It's interesting.



NG: What's it going to be called?

John: I don't know whether I can say the name of Todd's game because he just came up with a new name and we haven't trademarked it yet.

NG: Both of your other two games are using the *Quake* engine. What technology is Todd's based on?

"For the first time you're going to hear speech continuously through a game — an action game — through four different time periods"

John: It uses a really cool voxel technology for all the characters and stuff.

NG: So what's Tom's game all about?

John: It's called *Anachronox*. It's a 3D RPG, much like a Japanese console title — like *Chrono Trigger* or *Final Fantasy* — in the way that you control it, go through the game, fight, and see the characters.

You don't see this on the PC anywhere — and usually you have too much of a big world to wander around in not knowing what to do. Japanese console games, on the other hand, are completely story oriented and the players are guided through — even though they don't feel like they are. They also know what to do next at all points because the control is



very much standardized, so we really have a "Square" philosophy for the design.

NG: And in what ways will it be different from a console game?

John: Obviously it will have much more depth because console cartridges only hold so much and Tom's game design is massive.

NG: And it's using the *Quake* engine?

John: All the game's 3D uses *Quake* technology so you're going to be playing a game like *Chrono Trigger* with the *Quake* technology.

NG: So what's your game, the third of Ion Storm's initial line up, about?

John: It's called *DaiKatana*. My whole deal with this game is about taking my favorite game genre — which

is the 3D action, point-of-view genre — and take it to where I really think these games need to move.

NG: What kind of world is it set in?

John: It's set in 2455 AD with lots of robotic creatures. The player's character is Hiro Miyamoto...

NG: Named after Shigeru Miyamoto, the creator of *Mario*, by any chance?

John: I'm a fan of Shigeru Miyamoto. Anyway... you're going to be adventuring with Mikiko Ibihara who's a Japanese acrobat and scientist, and this big black dude named Superfly Johnson.

It's like playing a cooperative multiplayer game, but the computer controls the other two and the entire time you're playing the game the other characters are talking the entire time about what's going on.

NG: Text on screen, or actual speech?

John: It's like real life — you hear 'em. For the first time you're going to hear speech continuously through a game — an action game — through four different time periods. You start in 2455 AD, then 2030 BC in the Greek Mythological time period, then 560 AD in Norway during the dark ages. The fourth time period is 2030 AD in San Francisco.

NG: So what's the plotline behind the game?

John: It's pretty complex — it's kind of time travel paradox type problem. Basically, you need to go back in time from 2455 AD to 2030 AD to kill this scientist who's going to change time.

This one scientist found the *DaiKatana* and figured out how it had a time traveling potential in it. A bad scientist who was working with this good scientist was sick of being in his shadow and didn't think that he was going to put the sword to good use, so he decided to kill him and go back in time himself to change the good scientist's ancestors' fortune. You'll have to read the story but it's really interesting.

NG: How will these four different time periods differ?

John: They all have completely different graphics. There are none shared between the time periods except for some of the artifacts you pick up that are universal. There are 26 weapons — every time period has its entire complete set of weapons. Then there are completely new monsters for each episode and 16 monsters in each episode.

Quake only had 10 monsters for the entire game.

NG: By using the *Quake* engine, are you at all worried that you'll be criticized for — what appears to be — sticking to your established game genre?

John: I don't like reading game magazines when reviews of a clone comes out and the magazine says, "Oh no, another shooter," like they dread it. My favorite style of game is being dissed by these high-minded reviewers who think games should be more than base instinct experiences. I believe that getting an emotional reaction from players pays off big if you can get a player to feel fear, sadness, or happiness. Any game that doesn't evoke an emotional reaction is not going to work and won't sell. If, however, you can build a game that can do more than one emotion you're really going to win big. This is the stuff we did at Id, and this is what I want to do again.



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takes to conquer Metal Demons. And no, the ultimate goal of your quest is not to save the princess. It's to save the planet. Good luck. You're gonna need it.



LAND, YOU'RE GOING DOWN WHETHER YOU'RE READY OR NOT



Tokyo Game Show: A report from the show floor in Japan • **The arcade industry show in Las Vegas:** Konami steals the show with a fighting game and a racing game • **Microsoft's plan for games:** What will happen in 1997? • **GameWorks:** DreamWorks unveils its first mega-arcade • **Plus** the regular **Next Generation** columns



Videogame news from around the globe

Tokyo Game Show

Report from Japan

The story from Japan's biggest and best game show



Tokyo Big Sight was the site of the packed (120,000 people over three days) show. Warp opted to host Cherry Blossom festivities (right)



boasted the longest lines in the hall, and games from Sony, Sega, SNK, and Namco. But lesser known companies such as Imagineer, XING, and UEP Systems made a noticeable impact with exciting titles as well.

Among big names, no clear winners emerged at this

year's show, but perhaps the biggest surprise was the unveiling of Sega's *Sonic Jam*, a collection of several 16-bit *Sonic* games tied together by an impressive new 3D *Sonic* level in the vein of *Mario 64*. When asked if the new level was a sign of what might be coming by way of a full 3D *Sonic* game for Saturn, a Sega spokesperson suggested that what was showing was "only the beginning."

Sega also made a strong impression with a gorgeous demo of the *Panzer Dragoon* RPG called *Axel* and a promising version of *Last Bronx*, the weapons-based brawler that was a hit in Japanese arcades despite being a non-starter in the U.S. Rounding out the Sega showing was the F1 simulation, *Tactics Formula One*, a Saturn conversion of the *AfterBurner*-esque flight game, *Sky Target*, and the announcement of (and sneak peek at) *Sega Touring Car Championship* for Saturn. Conspicuously missing from the show was *Virtua Fighter 3* for Saturn and any announcement concerning the much anticipated hardware upgrade promised with it.

With PlayStation hardware so successful (selling in excess of 100,000 units a week in Japan), SCEI's new first party software strategy is to create games, such as *PaRappa*, that expand the hardware's appeal beyond traditional, hard-core gamers. In addition



From top to bottom, Sony's *Ghost in Shell*, Asmik's *Ultra Battle Royale*, Capcom's *RockMan X4*, and *Castlevania 64* from Konami

While there were several third parties showing N64 titles, Nintendo had no official presence at the show

Quickly gaining ground on America's E3 as the biggest game show in the world, the recent Tokyo Game Show (TGS) reinforced what most already know — many of the best games originate in Japan. TGS was officially attended by two of the three major hardware manufacturers (Sony and Sega) and filled to capacity with third-party publishers from every niche of the Japanese game market. While several third parties showed N64 titles, Nintendo had no official presence at the show — opting instead to support their own bi-annual Shoshinkai event. Day one of the show was scheduled as a "press only" day, but it proved difficult to keep out the many eager gamers able to somehow get in. Among the expected highlights of the show were key titles from SquareSoft, whose booth



One of Sega's premiere arcade developers, Tetsuya Mizuguchi revealed that his latest creation, *Sega Touring Car*, was on its way to Saturn



Though recent sales trends have favored PlayStation, Sega's lineup still drew big crowds



Neo Geo 64 arcade ran SNK's first 3D fighting game, *Samurai Spirits Zankuromusoken*

to traditional games like *Alundra*, a new RPG, and a shooter based on the *Ghost in the Shell* license (developed by *Jumping Flash!* creator's Exact), Sony's booth also featured a puzzle game, *IQ*, as well as titles like *Baby Universe*, a "virtual pet" game, where the user cares for and teaches a baby robot.

And just to keep things lively, the always amusing PaRappa the Rapper appeared every 20 minutes in a song-and-dance *PaRappa* stage show (co-starring Crash Bandicoot). With traditional gaming styles now being left to the sizable stable of third parties, look for more innovative (or at least experimental) products to come from SCEI, which, thanks to the success of *PaRappa*, *Crash Bandicoot*, *IQ*, and *F1* (licensed from Psygnosis), is now the largest console publisher in Japan.

The quality of N64 software at the show was mixed, but in general boded well for the platform, with some titles bearing the signs of true second-generation releases that may finally show the platform's potential.

Few of the other large publishers had any real surprises. Capcom made a big impression with *BioHazard 2* (*Resident Evil 2*) as well as a special edition version of the original *BioHazard* for Saturn. Konami made its mark with *Dracula X* and a sneak peek at *Castlevania 64*, the latest in the *Castlevania* series, an extremely impressive-looking *Metal Gear Solid* demo, and the cutesy *Ninja* title *Gambare Goemon 5* for N64. Namco treated gamers to a row of *Tekken 3* arcade machines, a stunning PlayStation version of the arcade light-gun shooter *Time Crisis*, and *Ace Combat 2*, supporting the new Sony analog controller. Despite offering nothing (beyond *Tobal 2*)

that gamers hadn't seen before, SquareSoft proved once again why it is so loved in Japan with the first hands-on testing of *Tobal 2* (running at an impressive 60 FPS in high-res mode), *Saga Frontier*, and *Final Fantasy Tactics*. SNK revealed its new direction with the unveiling of the Neo Geo 64 arcade technology and the first game to support the hardware, *Samurai Spirits Zankuromusoken*. The 3D game boasted extremely detailed Samurai warriors with graceful animation.

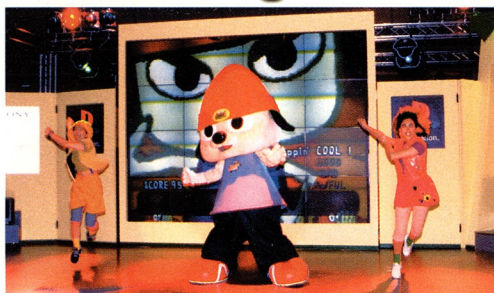
Despite the showing from the larger publishers, the smaller companies really made the show worth seeing. Companies such as Imagineer and its thoroughly enjoyable *Multi Racing Championship*, an off-road racer for N64, or UEP Systems with its multiplayer sequel to *Cool Boarders* both proved that you don't have to have the biggest booth to attract big crowds, only good games. Also attracting big crowds and players unwilling to give up their controllers was Climax's *Runabout*, a unique racing/action game with brilliant control, tons of vehicles (including a Vespa scooter and Cooper Mini, see NG 29 for a full preview), and compelling level design.

Another pleasant surprise was the exciting *ReciproHeat 5000* by XING, a solid, high-speed airplane racing game that should be coming to U.S. shores (with a less obscure name) from THQ. And just to round things out, the always inventive Warp (*D. Enemy Zero*) dedicated the first two days of the show to celebrating the arrival of Cherry Blossom Season, with Warp principle Kenji Eno acting as master of ceremonies. Imagine if Westwood had a booth at E3 but used it not to showcase games, but rather to hold a simulated July 4th picnic for two days, and you get the idea. On the third day, Warp unveiled the good-looking *D2* (allegedly running on actual M2 hardware).

What is it?

This precursor to the most popular fighting game of all time didn't have buttons. Instead, the game featured just two large rubber pads for the controllers

Despite the showing from larger publishers, it was the smaller companies that really made the show worth seeing



PaRappa is quickly becoming a cultural icon in Japan. Big crowds gathered at the *PaRappa the Rapper* stage show

breaking

GameWorks Kicks Off

GameWorks opens in Seattle and shows the gaming world Sega's and Microsoft's vision of arcade gaming



The grand opening of GameWorks drew big crowds and plenty of press coverage. Even big name celebrities such as Gillian Anderson of the "X-Files" got in on the action (above) while paparazzi galore caught them at the cabinets. With partners such as DreamWorks, MCA, and Sega of Japan, we don't image production costs will be too much of an issue

It is...

The original Street Fighter. The pressure sensitive pads, which corresponded to the punch and kick commands, were later replaced with six less innovative, but more convient buttons

March 15 marked the grand opening of the very first GameWorks center and, with it, the birth of a new style of twenty-something entertainment. Located in a trendy shopping district in Seattle, WA, GameWorks is a 15,000-square-foot arcade and entertainment complex designed to change the way Americans think about high-tech fun. With serious cash flowing into the project from GameWorks partners DreamWorks

(Steven Spielberg), MCA, and Sega of Japan, it just may work.

Despite claims to the contrary, the facility is at its core an arcade and is arguably the best arcade in North America. Comparing it to your local 2,000-square-foot hovel with a cigarette-burned, pea-green carpet and Bon Jovi pumping through a blown speaker is like suggesting that eating Pez straight out of the wrapper is just as good as from a Yosemite Sam dispenser. However, GameWorks isn't any less of an arcade, but this kind of first-class treatment led to the recent Hollywood-esque premiere party complete with celebrities, on-lookers, press galore, and a live broadcast via MTV. Present at the event and lending to the overall feeling of excitement were such notable characters as Bill Gates, Will Smith, and Gillian Anderson.

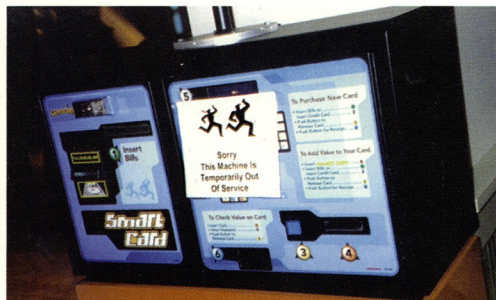
Everyone came to see exactly what would happen when the magic of Steven Spielberg, Jeffrey Katzenberg, and Sega of Japan all came together to create a new form of interactive entertainment. While it could be argued that GameWorks is more of a polish than a

Sega prepares Black Belt

Sega's new home hardware system is scheduled to feature a 3DFx-based graphics sub-system with 16MB general RAM, 2-8MB texture RAM, and a Microsoft OS likely to be some derivative of DirectX.

The hardware design is being conducted in the US by both Sega and SegaSoft and does not include perennial hardware partner Lockheed Martin. Internal teams are already working on three games including *Virtua Fighter 3*, a soccer game and a basketball game. Third parties should be receiving development kits as early as the first quarter of 1998, with an ambitious Japanese release scheduled for Christmas 1998. The US isn't expected to see the system until mid-1999.

Expect more news from Sega after E3.



Any business this reliant on high-tech is sure to have its problems — even on opening day. Fortunately, GameWorks didn't have too much trouble and instead just had to worry about counting the money

The Seattle center is modest compared to the site scheduled to open this summer in Las Vegas

reinvention, a few elements make this center stand out. For one, there's beer. Twenty-somethings like beer, and GameWorks has it — in fact, they actually have their own signature microbrews. GameWorks also breaks from the traditional arcade mold with its gourmet cafe and coffee shop menus. No overcooked hot dogs or soggy fries here. In the end, what GameWorks has that other arcades lack is production resources in the form of floor space, custom architecture, and access to the freshest thrills technology can offer.

The first in what GameWorks insists could be as many as 100 sites in the next ten years, the Seattle center is modest compared to the site scheduled to open this summer in Las Vegas. Doubling the size of the Seattle center, this 30,000-square-foot behemoth will blur the line between arcades and theme parks with its mix of traditional arcade games and amusement park-style rides.

This idea has already been explored to a certain degree in the Seattle center with attractions such as Vertical Reality, a shooting game that actually carries players four stories into the air and then drops them without warning. Also encouraging is the pledge that each center will be different thematically. The subtle, rustic factory approach of the Seattle center, after all, probably wouldn't fly in the "brighter is better" world of Las Vegas or Los Angeles.

ng



WaveRunner (top) drew contestants such as Bill Gates and Weird Al. Sega AM Annex's Tetsuya Mizuguchi stands in front of his game Manx TT (above)

In the studio

Behind the scenes gossip from game developers around the world

GT Interactive has been busy signing new products and licenses. At press time, sources inside the company reported that it had obtained the rights to distribute *Marine Doom*, a version of Id's game used to train U.S. Marines. GT is also in the process of securing the rights to the *Mad Magazine* comic strip "Spy vs. Spy."

No stranger to the gaming world, incarnations of "Spy vs. Spy" have been seen on Super NES, Game Boy, and as far back as the Apple II. GT is reportedly bringing the spies to the PC as a multiplayer action game.

More *Tomb Raider* is on the way. Nintendo and Core Design are negotiating over a proposed Nintendo 64 version of *Tomb Raider*, although no deal had been signed as of press time. However, Core has been working on the game in anticipation of a deal, and it is understood that it will feature new levels and gameplay features. A date has not been established for release but mid-1998 appears to be the earliest option.

Meanwhile Eidos has announced a PC expansion pack, *Tomb Raider: Unfinished Business*, which picks up where the original left off. Players will control Lara Croft in her quest to destroy the remaining hatchery of Atlantean pods previously encountered in the Atlantis levels. The add-on pack is expected to be released this summer for about \$20 and requires the ownership of the original title. *Tomb Raider 2* for PlayStation, Saturn, and PC is due out later this year.



Working Designs will ship its first PlayStation product, *Ray Storm*, under its new **Spaz** label. "Our plans for Spaz are very simple," says Working Designs president Victor Ireland, "to revive the shooting and arcade genres that have all but died in the U.S." *Ray Storm*, a port of a Taito game, is should be shipping soon. Working Designs intends to have several unnamed games out under the Spaz label on both PlayStation and Saturn by the end of the summer.

Electronic Arts has flip-flopped its position on Nintendo 64, and now plans to release several EA Sports games next year. As reported in this section last month, VP Bing Gordon had expressed doubts as to EA's future with N64. The company has also complained incessantly about high cartridge prices and had questioned many of Nintendo's policies.

However, high pre-orders for *FIFA Soccer 64* convinced EA that the numbers were right for a full-scale commitment to the machine. EA has not announced which games will make it onto N64, but its safe to expect several hit franchises, which may include *Madden Football*, *NBA Live*, *NHL Hockey*, *PGA Tour*, and *Triple Play Baseball*.



Midway has revealed some elements of *Mortal Kombat Mythologies: Sub Zero*, a new adventure game. In development for PlayStation and Nintendo 64, *MKA* is the first console exclusive title developed in-house by John Tobias and other members of the *MK* arcade group. Gameplay will be a cross between adventure and beat-'em-up games. It has also been described as "Pseudo 3D" in that it is possible to move into or out of the screen. It is set on Earth in the *MK* timeline before the tournaments of *Outworld*. It is slated for release this November.



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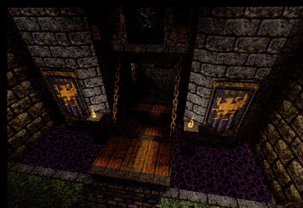
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Konami Steals The Show

The New Cobra board is unleashed at the ASI arcade show

Inside the Cobra

IBM and Konami combined to create the Cobra board. Below is a list of technical talk that equals some incredible looking games, and according to Konami, "at a reasonable price."

Main System

CPU
Power PC603e 100mhz
sub CPU
PowerPC604 100mhz

3D-CG System

1 to 5 million polygons/sec
50 to 250 million pixels/sec

Raster

Resolution of 640x480
144bits/pixel frame buffer
24-bit color
8-bit alpha channel
32-bit depth (floating-point Z-buffers)
Polygon & wireframe
Rasterization

Shading

Anti-aliasing by
Subpixel sampling
Flat shading, and
Gouraud shading

Lighting

Up to 8 light sources
consisting of:
Parallel light
Point light
Spot light

Environment

Linear fog, exponential fog
Particle emulation
6 Clip planes

Texture

Texture mapping with
perspective correction
Mipmap support
Bilinear & trilinear filtering
Real-time texture load
system

The city of sin, Las Vegas, served as the backdrop for a gathering of all the arcade industry's biggest players. Sega, Namco, Capcom, SNK, Williams, Atari Games, and Konami all convened in the diminutive Sands Convention Center to show off their wares. The crowded show floor was littered with new arcade machines set for free play, yet what drew a lot of attention was a 10-minute videotape highlighting two new games for Konami's Cobra arcade board. The impressive demo highlighted an as yet unnamed fighting game (codename PF 573) and a new racing game titled *Racing Jam*.

The fighting game featured photo-realistic graphics that rivaled Sega's *Virtua Fighter 3*. However the motions of the characters were a bit stiff and couldn't compare with *VF3*. The game excels in graphical realism. The environments looked incredibly realistic from the candle-lit castle interiors to the crashing waves along the shoreline cliffs. The demo showed eight different fighters (at least 10 are planned) which had extremely human looks. Individual strands of hair flowed in the wind, for example. Once Konami decides on a name, PF 573 should be hitting U.S. arcades this summer.

More impressive was *Racing Jam*. The demo showed three different tracks each with distinctive elements. The first track is a pylon obstacle course, where the player must maneuver between the cones at top speeds. The second course is a more standard road course, with winding cliff roads and crashing



Seen in a demo at the show, *Racing Jam* uses Konami's new Cobra arcade board



waterfalls. The final course is a night course where the cars' headlights illuminate the course with amazing detail. The game features real cars which will all handle and perform differently. The only known cars are an MR2, an Imprezza, and a Celica. The cars have spinning rims, smoking tires, and a driver inside. The graphics in *Racing Jam* even surpass Sega's mighty *GT Racer*. *Racing Jam* is expected late this fall.

Other new titles at the show included: Sega's *Hummer*, a shooting game based on the *Gunblade NY* engine; William's retro-update to *Rampage*, which features a 3D Godzilla; and *Samurai Showdown* for the new Neo-Geo 64 arcade board. The show floor was also filled with the usual driving, fighting, and shooting games — read more about those in "Arcadia" on page 28. ng

What drew a lot of attention was a 10-minute videotape highlighting two new games for Konami's Cobra arcade board



Codenamed PF573 for now, the Konami fighting game should prove to be impressive with its photo-realistic graphics, incredible environments, and various characters. The game is due out this summer

breaking

Microsoft's Second Half '97 Plans Revealed

From API's to software publishing, Microsoft is continuing their gaming endeavors

Microsoft is continuing its efforts in the computer game space, and as with most Microsoft products, given enough time, it seems to be figuring things out. First is Direct X. The early versions of this group of low-level Windows 95 gaming APIs shipped late and failed to satisfy the needs of the developers trusting enough to commit to them. That may be changing with D5. Microsoft's DirectX plans figure greatly into Internet Explorer and even into non-PC projects.

Among the new initiatives for DirectX are the plug-ins that will be used for web applications. Microsoft is looking to incorporate new 3D objects, streaming audio, video formats, and more. Key to these plans are the creation of a new format called XFiles or XObjects. XObjects are 3D models that can be embedded within web pages, VRML worlds, and even games. Likewise, it will be possible for developers to stream video onto polygonal surfaces within games or within web pages through the use of Microsoft's new video streaming format.

Other improvements in the latest version of DirectX 5 include full Java support, which has been catching on more and more within the development community. Says Kevin Dallas, Microsoft's DirectX Guru, "We've listened to what our developers wanted and tried to give it to them."

While DirectX has traditionally been associated with the PC, Microsoft has plans to expand its sphere of influence into the arcade and even console markets. Speaking with numerous arcade developers and console manufacturers, Microsoft seeks to provide an easy and cheap means for developers to place their content on multiple platforms. While some components of DirectX are Windows 95 specific, the majority of the services can be lifted onto other architectures.

On the consumer side, Microsoft

will shortly be introducing a force feedback joystick and a series of APIs to support it. A SideWinder product will also be shipping soon for the Mac. We'll have complete details on this hardware next month.

As for Microsoft's game publishing division, it's got ten products prepared to ship before the end of the year. First impressions? They look a lot better than last year's crop, that's for sure. The "we make games for a broad audience" (that is, not gamers' games) attitude has changed significantly since Ed Fries (whose credits include creating the pre-cursor to After Dark as well as serving as lead programmer for Word) joined the consumer division nearly a year ago.

Baseball 3D will be one of the first titles on PC to require a 3D accelerator, and it looks great, with up to 1,000 polygons per player, consistent 30 fps animation, and the full range of graphic effects you'd expect (mip-mapping, anti-aliasing, and so on). Other titles coming include *Age of Empires* and *Close Combat 2: A Bridge Too Far*, which adds strategic elements and a new campaign, among other improvements.

Data stream

According to the SPA (Software Publishing Association): Approximate revenue lost worldwide due to software piracy:

\$12 billion

N64 worldwide shipments reached by the end of 1996:

Circa 4 million units

Amount of added footage in the new "Star Wars Special Edition":

4 minutes

Average daily hair loss of a human being:

40 to 100 strands per day

Amount of time the human eye is closed in a day through blinking:

20 minutes

Sony's revenue from global PlayStation hardware and software sales to date:

\$2 billion

Percentage of the 459 titles listed in the Spring '97 Tokyo Game Show catalog that are for PlayStation:

45%

Saturn:

31%

Windows 95:

10%

Nintendo 64:

5%

Mac, Game Boy, Neo Geo CD, Super Famicom and others, combined:

9%

Percentage of people who use their computers for videogames:

55%

For personal finance:

47%

Percentage of Pentium owners who use their computers for games:

69%

According to *More!* magazine, percentage of women who find the smell of alcohol on a man's breath a turn-on:

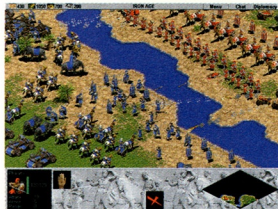
39%



Close Combat II: A Bridge Too Far adds strategic elements as well as fixing some control problems



Baseball 3D will require a 3D accelerator, and it features 1,000 polygons per second



Age of Empires looks to combine the best elements of C&C and Civilization

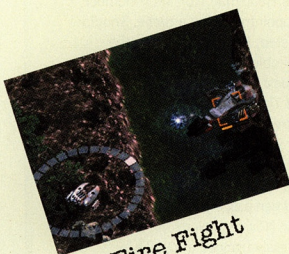


HEAVY METAL



COOL JAZZ

Whatever your taste, we've got a game for you.



Fire Fight

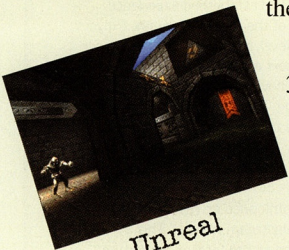
No two people have exactly the same taste. So we've loaded enough variety into our Only for Pentium®, Only for Windows™ 95 game lineup to make everyone happy.

Does flying around in a turbocharged spaceship blowing away insurgents sound like your idea of a relaxing Saturday afternoon? Give **Fire Fight** a try.



Jazz Jackrabbit 2

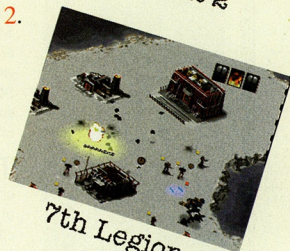
Crave the high-speed action and brilliant graphics of the best arcade games? You're gonna love **Jazz Jackrabbit 2**.



Unreal

Waiting patiently for the next wave in first-person, 3-D action games? Your wait will end with **Unreal**.

Like to use some strategy before you obliterate your enemies? **7th Legion** lets you do both.



7th Legion

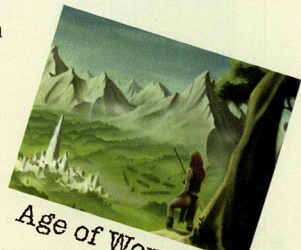
Prefer a little humor and attitude with your adventure? **Curly's Adventure** will give you plenty.

Does 20th century life seem a bit dull to you? Return to the **Age of Wonders** for some real excitement.

Whatever your taste, we've got a game for you.



Curly's Adventure



Age of Wonders



For more information, visit us at www.epicgames.com.



by **Christian Svensson**
 Christian Svensson is the assistant editor and webmaster at Next Generation Online which can be found at <http://www.next-generation.com/>



SegaSoft launches a new online gaming service that should turn the heat up on the competition. Will a champion ever emerge from this multiplayer battle?

Just when you thought that there had been some consolidation in the online gaming universe, SegaSoft is preparing the launch of its Heat gaming service. Relying heavily upon the Sega name, borrowed technology from industry leaders, and extremely deep pockets that should go miles towards generating subscribers and revenue, Heat is certainly a service to watch when it launches this month.

Heat's model is similar to Mplayer's; it features a free segment and a nominal subscription for premium services. Revenue will come from both advertising and sales of products and services. Gary Griffiths, SegaSoft's president and COO, said, "We're a distributor like any other, so when we go to a software publisher to buy product, we can use that to encourage them to make their products Heat-enabled." Developers and publishers will also receive compensation in line with what other services offer for such modifications. Griffiths was keen to point out that Heat will not be seeking exclusives from other publishers (as TEN does), but SegaSoft will be developing a number of titles in-house for use on its service.

The other major twist to Heat's plans is the addition of incentives for play called "degrees." Degrees are earned in a number of ways, the most basic of which is what SegaSoft has called the "challenge bonus." Essentially players can wager some number of degrees against other players upon the outcome of the game. Also, participating in advertising programs, such as passing through an interactive ad for Levi's, can give viewers degrees. A player's position on perpetual ladders can also earn them degrees provided they stay highly ranked. The addition of the degree program will add to the competitiveness of the environment as the degrees are tangible and players compete for them in every game.

Degrees can be redeemed for special deals on software, services, or use within games. For example, SegaSoft's *NetFighter* will give an extra combo to a player who spends 1,000 degrees before the game. Such elements should enable more dynamic gameplay in future titles. While it will be impossible to purchase anything entirely with degrees, members can get upwards of 40% off on games they would ordinarily buy.

Technically speaking, Heat has, at least on the surface, all of the bases covered. The first portion of Heat's technology is essentially Mplayer's network, client and protocol technologies acquired through the connections of its parent company, CSK, which also owns a stake in Mpath. Heat's client software, *Katalyst*, is extremely similar to Mplayer's gizmo interface aside from the elimination of the Voxware voice features. Engineers at SegaSoft claim most bugs in Mplayer's software are caused by the voice module, which has been removed. The second portion of the network technology is a cannibalization of Kahn, which is an IPX tunneling package already widely available on the Net. This feature enables games that normally run over a LAN to run just fine over Heat. Even games that aren't Heat-enabled will still be supported (much to the dismay of services who

pay millions of dollars for "exclusive" content). This combination of technologies makes Heat a threat to the other services. Out of the box, it will support the majority of titles on the market, without any complex hassles.

Heat will house servers on various providers, but this won't entirely eliminate latency problems. From what we saw, performance is similar to Mplayer's. Time will tell if it stays that way under the considerably heavier user loads that will be in effect when the service is launched.

Unlike Mplayer, Heat has created a massively detailed and extremely useful web interface tailored to each user. Every member has his or her own web page housed on the Heat server. User rankings in various games, contact information, and personal profile information are all stored for other members to view. Some data can be hidden, but a member's exact identity and ranking information is always present. It also provides an internal mail interface, scheduling capabilities, and state data indicating whether the person in question is online at any given time. For example, I could see when players play and whether they are *Quake* fanatics preferring team games. I could then send a Heat-mail (for inter-member use only) requesting an appointment for a game. Should this member not be interested, I could go also to the scheduler utility (also available from the web services) and put out a general request for someone to play a game of team *Quake*, next Thursday, on the third episode level three. Also shown here is the expected "challenge bonus" and loads of other parameters, any of which can be searched for through the interface.

Online gaming services need to appeal to both novice and hard-core players and generally keep the two separate from one another. Novice players can easily get frustrated if they are endlessly frayed in *Quake* by experienced gamers, and experienced gamers need continual challenge. Heat has established experience levels for players on each of the games they play. Players can initially choose their level, but certain events trigger their movement into the next echelon. After playing a certain number of games, novice players will be bumped to the intermediate ranking. The moment a player enters a tournament, he or she is considered an expert.

Mplayer, TEN, Heat, and Engage have each seized niche portions of the market, and no one service has established dominance or reached any sizable portion of the mainstream market. This situation is directly related to the lack of marketing outside of extremely focused audiences. Heat hopes to change this with national television and print campaigns touting its "cyberdiversion" movement. Such efforts are, at least for now, outside the budgets of most competing services. With Microsoft's Gaming Zone looming in the future, and the dollars Microsoft will inevitably be spending to promote it, a five-way war may be underway shortly. Then again, looking at the Microsoft Network's pathetic entrance to the world of Internet providers, it may just stay a four-way war. Either way, we'll keep you posted.



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Arcadia

All the latest arcade and coin-op news

Konami America Blows Away the Bad Guys

Deluxe sims with inventive twists abounded at the arcade industry's spring tradeshow, held mid-March in Las Vegas. The emphasis was on giant 50-inch monitors, dual 33" monitors, unusual controls, and creative (in some cases, downright goofy) themes.

Operation Thunder Hurricane has a massive two-player video with a 50" screen, hand-held machine guns featuring lifelike recoil, and cooperative gameplay. Players take the part of gunners on a helicopter, shooting at Neo-Axis forces such as tanks, ground troops, enemy ships, choppers, and airplanes in various settings (city, desert, jungle, ocean, temples, and so on). Visuals include 3D texture-mapped graphics from its "Scorpion II" hardware platform, which was developed totally in-house. By the way, Konami is still teasing players with intriguing previews of a fighting game which will use an even more powerful hardware system, developed with IBM.

Konami's *Hang Pilot* is another huge deluxe simulator, but this one-player unit showed the action on two vertically stacked 33" monitors — great for the illusion of height and depth — while the player uses a moving foot/knee pad and hangbar/handlebar control to guide his hang glider over three courses of varied difficulty. Again, visuals include 3D texture-mapped graphics using Scorpion II. This one could give you vertigo, and we loved every minute of it.

Konami also showed *GTI Club*, that spiffy sit-down racing simulator in which players race over the French Riviera in a Le Mans-style race and can toss live grenades back and forth from car to car in a lethal game of "hot potato." Sad to say, the beautiful deluxe cabinet version will appear in the U.S. in very limited numbers. But, gameplay is still fun in the non-deluxe, sit-down version that is to be the company's production mainstay. And that's the one you will probably see in your local arcade.

Armadillos Run for their Lives

Namco America combines fun, chuckles, and competitive challenge with *Armadillo Racing*, a two-player, two-screen dedicated upright. Players use trackball controls and (in an industry first) get a first-person, armadillo's-eye view as these multicolored critters race through an obstacle course (that is, you control the blue and green splotched 'dillo; I control the red and yellow one). Watching the body motion is a riot because armadillos are not the most graceful of runners. You can't miss the big red and yellow cabinet that links two 33" monitors side by side.

Sega and GameWorks

Sega GameWorks rolled into the deluxe simulator arena with *Top Skater*, a huge 50" monitor specialized game that enables the player to control motion via standing on a moving skateboard platform. Visuals include 3D texture-mapped graphics using the Model 2E platform. The

soundtrack was created by a L.A.-based punk band appropriate for the skateboard theme, no doubt.

Sega's *House of the Dead*, a two-player upright gun game will arrive for arcades in two formats: a 50" monitor or a 29" monitor. Comical shooting action has players blasting away with heavy-duty machine pistols at cartoon-like zombies, aliens, and other bizarre creatures. It should be shipping this month.

Virtua Striker 2, sequel to last year's soccer-themed sports game from Sega also comes with either a 50" or 29" display. What's distinctive about this is its use of the Sega Model 3 hardware platform, so you know it's got to be so realistic that you can smell the turf under your feet.

Vivid's Racer with a Big Head

Vivid Group, a Canadian factory, combined humor and thrills with *Big Head Racer*, a goofy sit-down driving sim that actually puts the player's live, real-time video image (head only) onto the monitor's computer graphics. One-person cabinets may be linked for interactive gameplay so when you link eight units together, the result is pretty wild. These networked Pentium-based systems feature Voodoo 3D graphics from 3Dfx and can link up to eight players. You can make faces at your competitors as you leave them in the dust. They will see your grin of triumph on their monitor as you appear to be inside a car whizzing by.

The really wild thing about the game is that you steer with your head. That's right, the way you lean and tilt your head controls your car's angle and direction. It sounds crazy, but once you try it the experience intuitively makes sense. And it fits right into the Vivid tradition of "put you in the picture" camera-type VR games, where the player's body motion "is" the control interface for a fantasy video environment.



Diverse games *Top Skater* (left), *Armadillo Racing* (right), and *Big Head Racer* (bottom) were at the show

by Marcus Webb
Marcus Webb is the editor-in-chief of *RePlay* magazine, the leading U.S. trade amusement magazine



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The business news that affects the games you play

movers & shakers

by Colin Campbell
Colin Campbell is the editor at of Imagine Games Network and editor of Next Generation Online which can be found at <http://www.next-generation.com/>



FRIENDS AT LAST

NEWSLINE: The warrior nations of Electronic Arts and Nintendo finally came to a significant agreement on a publishing strategy. EA Sports said it would publish its titles on Nintendo 64 through 1998.

BOTTOMLINE: EA and Nintendo have been on less-than-friendly terms since the rambunctious days of Trip Hawkins. The former EA chief was still making trouble when he formed The 3DO Company and was found bad-mouthing Nintendo — a company with an extraordinarily long memory. Despite Hawkins no longer having anything to do with EA, it still caused rancor between the two companies. Only the patient negotiating skills of Larry Probst brought the two together without either feeling it had ended up with the worse end of the deal.

64DD DELAYED

NEWSLINE: Nintendo has finally admitted that 64DD will not be in the United States before the end of this year.

BOTTOMLINE: But, according to Nintendo U.S. chief Howard Lincoln, it will make it into Japan by year's end with only one title (that being *Mother 3*). Curiously, in an interview on the subject, Lincoln repeatedly referred to the disk-drive add-on as DD64. Surely not more name-changes to go with the delay? Some things never change...

SONY TO SEGA

NEWSLINE: Yet another Sony veteran has migrated to the Sega U.S. team. This time it is Shuji Utsumi who joins Sega of America as its head of software development.

BOTTOMLINE: Utsumi will be working alongside recently promoted (and fellow-former Sony man) Bernie Stolar on reversing the company's fortunes in the hardware wars. At the time of writing, Saturn was still priced at \$50 more than PlayStation and Nintendo 64 (albeit with the now tired triple-pack promotion).

HURRAH! ALL'S WELL

NEWSLINE: The game industry is in splendid shape, according to trade body IDSA.

BOTTOMLINE: According to the Interactive Digital Software Association, 1996 witnessed an overall increase in software sales of

16%. Videogame software sales were up 14%, while PC game sales were up 19%. 1996 sales hit \$2 billion while PC entertainment software accounted for \$1.7 billion. In addition, 109 million units of entertainment software were bought in 1996, including 50 million units of videogame software and 59 million units of PC game software. Five million next-generation consoles were bought during the year, making a total U.S. base of 5.8 million.

TWO RAIDERS

NEWSLINE: Core Design and Shiny Entertainment were at each other's throats over the future of two talented programmers.

BOTTOMLINE: Shiny announced that Toby Gard, the man responsible for *Tomb Raider*'s design as well as lead programmer Paul Douglas had been poached. Core shot back that no such move had been made, and an unceremonious scuffle followed in the press. The result? Presumably the programmers got a pay increase.

CORPORATE CULTURE ALERT

NEWSLINE: What videogames prepare you for the world of work and today's corporate culture?

BOTTOMLINE: That's the question *Next Generation Online* asked its readers last month. Some answers? The original *Donkey Kong* because no matter how hard you try to climb up the ladder there will always be some big stupid ape at the top. Or *Command & Conquer* because after all, you never know when the rest of your company is going to get eliminated. Or *Sim City* for management skills: Control mindless drones as they build straight lines and squares.

GAMEWORKS FIGHTS FOR ALCOHOL

NEWSLINE: GameWorks's efforts to build one of its massive arcade centers in Texas has resulted in a legal battle over liquor licenses.

BOTTOMLINE: In Texas, an alcoholic manufacturer cannot participate in the retail sale of such products. Since Seagram's (who makes alcoholic beverages) is a 24% owner of GameWorks, this law would be broken. Officials of GameWorks, a venture between Steven Spielberg's Dreamworks, Seagram's, Sega Enterprises, and Universal Studios, have said that it isn't likely to open in Austin if it is unable to obtain a liquor license. (For more on GameWorks, see pg. 16.)

TOMB RAIDER

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If you know **Tomb Raider**,
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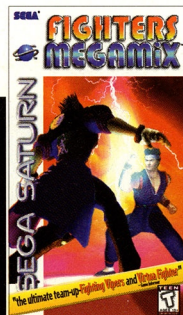
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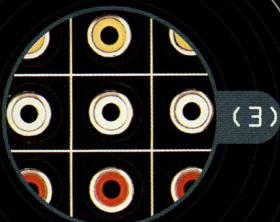


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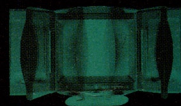


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A man with dark hair, wearing a dark suit jacket over a patterned shirt, is pointing his right index finger directly at the camera. He has a slight, knowing smile. In the background, a box for the Star Wars Shadowlands board game is visible, featuring characters like Yoda and Chewbacca. The text is overlaid on the image in a large, white, sans-serif font.

**Is your
favorite
game company
ripping
you off?**



Why do games cost so much money? When you hand over \$50 for the latest title, are you getting a fair deal or are you getting ripped off?

Format wars come and go, v "Hot" topics burn themselves out in the heat of the spotlight: copycat violence, epilepsy, and addiction are just a few of the contentious issues to attach themselves to videogames in recent times only to be jettisoned after everyone got bored of the merry-go-round debates. There is, however, one question which is always lurking in the back of every gamer's mind, one issue which just won't go away: "Are videogame companies ripping you off?"

This constant question and controversy has dogged gaming from *Space Invaders* on Atari 2600 to *Turok* on Nintendo 64. At the heart of the issue is the concept of value; is a game worth the money you pay for it? The question is heavily loaded with all sorts of objective criteria, and consumers give different answers in relation to different games. To come to any sort of conclusion, we must ask specific questions with definite answers. Questions such as: How much do games sell for at retail? How much does it cost a publisher to bring a game to market (and therefore, how much profit does it make)? And how many units can a publisher expect to sell?

The average price of a new PC release is around \$40. At the bottom end of the market, most major publishers have budget software, typically featuring products more than a year old which sell for between \$15 and \$25. PC software prices have risen by about \$10 in the last

ng special

five years, but there's a good reason for this. Because the PC is an open format, and the market is not controlled by any one manufacturer, publishers have invested an enormous amount of development time and money. Chip manufacturers such as Intel and 3D acceleration and sound card manufacturers have driven hardware technology at such a pace it seems you can buy a PC in the morning only to find it's out of date by the afternoon. Because of this phenomenon, software publishers have had to commit more time and money to products just to keep up with the pace of technological advances, and these investments are almost always passed on to the consumer.

Compared to the rise in games' retail price, the average development budget of a new title on any format has sky-rocketed in the last five years because of increasing consumer demands for big production titles. In the early '90s, a publisher would spend around \$300,000 to develop a game for the PC, Super NES, or Genesis. Now the average budget is around \$1 million — and it can be a lot higher. A few games have even passed the \$10



In the early '90s, a publisher would spend around \$300,000 to develop a console game. Now the average budget is around \$1 million

million mark, Origin's *Wing Commander IV* being one of the more high profile examples of recent times. But, as *WC IV* proved, big bucks don't guarantee a good game. When budgets start spiraling towards eight figures, the publisher has usually made the decision to "go Hollywood," incorporating lots of Full Motion Video (FMV) or other non-essential special effects into a game. This presents two different problems. First, if you want it to look good on-screen you have to use good writers, good directors, good actors, good artists, and a good technical crew. You also have to allocate a decent amount of time to a shooting schedule. This all costs serious money.

The second problem is that if a publisher does it cheaply, it shows. And the FMV can actually detract from, rather than enhance, a game. In fact, a growing feeling among consumers is that even well-done FMV can be little more than an intrusion on a game. And a game is what they want — if they want to see a movie, they'll rent a video. There have even been a handful of companies over the past few years such as Digital Pictures that were forced out of business because of their heavy reliance on expensive, but unpopular, FMV titles.

WHERE DOES YOUR MONEY GO?

From your pocket to the developer, who takes a slice of the money on the way?

Let's take a new PC game selling for \$45 as an example. It was developed by a third-party team but has no license attached. It was backed by a worldwide marketing budget of \$2 million.

- The consumer buys it from the retailer for \$45.
- The retailer buys it from a distributor for \$33.
- The distributor buys it from the publisher for \$30 (this is the wholesale price). This means that 66.6% of the consumer's money finds its way back to the publisher, but that doesn't mean that this is all profit.
- The development team gets a royalty rate of 30% of the wholesale price. This equals \$9 per unit.
- The cost of goods (including disc, packaging, instruction manuals, and so on) is about \$4.50 per unit.
- The worldwide marketing spend also works out at around \$4.50 per unit.

So, the development, manufacturing, and marketing costs take \$18 dollars from the publisher's \$30, leaving \$12 as profit. But there are still bills to be paid. The publisher might have spent \$1 million over 18 months in order to complete the production of

the game. That figure has to be subtracted from the nominal profit figure of \$12 x Total Sales. Publishers also have operating costs. The biggest publishers such as Electronic Arts and Virgin employ thousands of people in dozens of offices around the world which equals a serious amount of overhead. And then finally there are corporate taxes to be paid.

The publisher is left with about \$3.50 to \$4 per unit of pure profit.

How much money it makes is then down to how well the game sells. Only one or two games per year sell as many as 1 to 2 million units. A dozen or so very good titles sell 300,000 to 500,000 units. Then 500 or so sell 100,000 to 200,000. But this ridiculously overcrowded market still leaves room for literally thousands of PC titles to sell much less than 100,000 worldwide, which means, because of up-front expenses and non-refundable advances, games probably create a loss rather than a profit for the publisher. If the model is moved into the console market, the significance of the manufacturing premium and royalty payments becomes obvious.

On PC, a wholesale price of \$30 led to a retail price of \$45, but on Nintendo 64, a publisher could be charged as much as \$35 for the manufacturing and packaging process. The wholesale price still has to account for factors such as marketing and development costs, so the publisher can easily end up selling the game to distributors for over \$50. Reasonable margins added on by distributors and retailers then result in a \$70 price tag for the consumer. If this is a rip-off, the trail of culpability leads back to the manufacturing premium and royalty rate imposed by the format owner.

Publishers have woken up to this and are generally shying away from the \$10 million mark these days. But, while the ceiling has, for the time being, been lowered, the average cost of game development continues to rise. On top of the actual cost of development, royalty payments have to be given to the developers themselves. This is rarely the biggest expenditure, and few would disagree that the team that actually created the game deserves a piece of the pie. An independent third-party developer might get a non-refundable advance against royalties of, say, \$2 million. It would then get different royalty rates for different formats. On the PC, a developer might receive anything from 15% to 30% of the profits depending on its experience and brand value. On a cartridge format it would get 6% to 10%, while on PlayStation the going rate is 10% to 15%. All figures generally apply to the wholesale rather than retail price.

The reason for the variations across the formats is, quite simply, that a publisher can afford to offer more to developers for PC titles than it can for any console title—and it has to offer more if it wants to attract the best talent.



Publishers have woken up and are generally shying away from the \$10 million mark these days

No manufacturing premium exists on the PC and no royalty payment is owed to a format owner (more on that contentious little nugget later). A publisher working on a PC title can also use the funds saved on royalty rates to increase marketing or general productions costs. On any console format, a publisher has already paid anything from 40% to 60% of its wholesale price to Sony, Nintendo, or Sega just to get finished goods ready to roll out to retail and so has less percentage points left to offer developers. This is why, for instance, Sony, which doesn't have to pay the manufacturing premium and royalty rate, can offer developers 30% on PlayStation—but then the developer must balance this offer against the fact that Sony will insist the game isn't published on any other formats (in other words an independent publisher's offer of 10% of PlayStation sales plus 25% of PC sales might add up to more than Sony's offer of 30% of just PlayStation sales). Despite the potential hazards of single console publishing, titles such as *Resident Evil* from Capcom proved that this method is very capable of producing huge profits and that porting a game to multiple systems is not always the best option.

JUST LIKE THE MOVIES?

People often compare videogames to movies when talking about price. But this isn't a fair comparison. Here's why:

The game market is most commonly compared to the film business. Obviously, a great deal of crossover exists between the two art forms. Both are largely visual, plot-driven, character-based, and reliant on technology and special effects. There are also many shared skill-sets such as those of directors, writers, and animators.

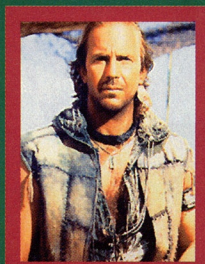
Initial comparisons between the financial models of each market would seem to back up the argument that games are a rip-off. After all, movies cost far more to make, but the biggest blockbuster can still be seen for around \$7. The average development budget for a studio picture is probably around \$20 million, nearly 20 times that of an average-sized game. And major movie studios continue to push production costs higher.

One of the most expensive movies ever made is *WaterWorld* with a total cost of \$175 million. Game publishers point out, however,

that the film industry's audience is virtually limitless and truly global, with very few countries remaining untouched by the hand of Hollywood. Software can only be bought by consumers with the relevant hardware. This immediately puts a very definite ceiling on sales. Games also tend to be bought mostly by 12- to 24-year-old males, and movies appeal to a much larger audience. These parameters aren't fixed, but they have been truisms of gaming for over a decade and even now are only showing small signs of shifting. Certainly, no single format can be called a worldwide standard. The PC comes close, but many still use it strictly for business and not for games.

One global hardware standard would help enormously (and would be welcomed warmly by publishers and developers). It would reduce risk, reduce cost and, eventually, reduce prices. But it just isn't going to happen. There's too much money to be made by deeply entrenched rival manufacturers.

While game companies may complain about the comparison of movie prices and game prices, the game industry has pushed the comparison whenever possible in an effort to legitimize itself. If this has led to unfair comparisons in the pricing models—then the industry has no one to blame but itself.



Hollywood can afford to spend over \$100 million on a movie because of the worldwide marketplace

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One way to avoid royalty payments to third parties is to develop products in-house. There are two ways a publisher can do this. The first is to grow an in-house team organically, paying high salaries to attract staff from rival companies and letting a department grow gradually. However, this approach can turn out to be as expensive as paying a third party and sometimes carries with it an even greater risk. One high profile publisher set up a 55-strong, in-house team two-and-a-half years ago. At its inception, four products were in the pipeline, and all were scheduled to be released within 12 to 18 months. So far, not one game has made it to market. If that development team has an annual wage bill of \$1,650,000 (that's an average of \$30,000 per person), the publisher has already spent at least \$4,125,000 maintaining a facility which has yet to yield any return. It amounts to a substantial investment — and while the team may go on to deliver classic after classic, the initial outlay is still a huge risk, and the publisher will look to reflect that in its retail prices.

Another way to have an in-house team is to buy one. But again, a tremendous risk is involved. In 1995, Acclaim Entertainment spent \$100 million



It's a gamble that will be reflected in the price. Publishers who take big risks want big rewards — as soon as possible

acquiring the services of Sculptured and Iguana as well as leading European team Probe. Other publishers such as Electronic Arts and, more recently, GT Interactive and Eidos have spent similarly large amounts buying talent. No one's saying the teams involved aren't worth the money spent, but it's a gamble that will be reflected in the retail price of the products. Publishers who take big risks want big rewards — as soon as possible.

Narrowing the discussion to console formats only for a moment, the manufacturing premium and royalty payments charged by the format owners come into play. It is this "software surcharge" that keeps the price of console games so high — and is at the heart of the issue of value for money. It is a business model that was firmly established by Nintendo with the NES in the mid '80s, and all the console companies, including Nintendo, still adhere to it today.

Here's how it works: When a third-party publisher has developed a game, it must hand the code over to the hardware manufacturer who then charges to manufacture the finished discs and charges a royalty for every unit sold. On the Sony PlayStation, this charge amounts

THE DREAM SUCCESS...

Every game publisher dreams of the one big mega-hit that will make its fortune

The In-House Development Plan

From a publisher's point of view, the "dream game" is a PC title with relatively low production costs and no added extras (license, royalty fee, and so on). It nevertheless sells in blockbuster numbers. Ideally, the development team would be in-house and, therefore, salaried with no expectations of large royalty payments. The problem is that the best software often comes from independent teams earning royalty rates on sales.

The Up-and-Coming Development Team Plan

An alternative dream game comes from a relatively unknown team with no cache (and therefore no high price tag) attached to its name. *Populous* from Bullfrog is a good example. The team has become one of the most respected (and well-rewarded) in the business, but they were once the new kids on the block, willing to accept a smaller advance and lower royalty

than an established team would. So in a case like this, the publisher gets the rights to an AAA title for a relatively small amount up-front and a royalty deal as low as 10% (or less) of the wholesale price. The game then gets developed for a reasonable sum such as \$600,000. It is then published on the PC, with the cost of finished goods working out to about \$4.50 rather than the \$15 to \$35 it would cost on a console.

The Reasonable Marketing Plan

With expectations low, the publisher isn't likely to commit to a global marketing budget of more than \$1 million. If the game takes off this could amortize out to about 4% of the wholesale price of each unit compared to the 30% that some publishers have spent in the past.

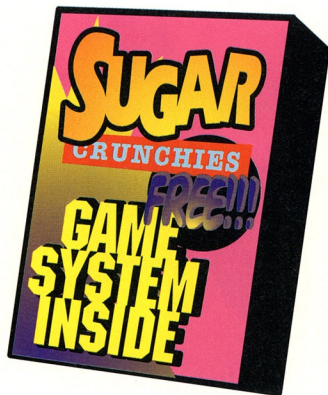
The Word-of-Mouth Blessing

The key is the quality of the game. If the press hail it as a breakthrough title and word of mouth creates momentum, then a publisher can have a million-seller for initial expenses of less than \$2 million and around 40% of the \$30 wholesale price as profit (compared to an average of less than 10%). This means \$12 profit for every unit sold. If the game sells a million, that's \$12 million profit for very little original outlay.

Not bad business. But the Dream Game is more than counterbalanced by...

to around \$15 per unit. On the Nintendo 64, it is more like \$30 to \$35. Part of this money helps the hardware company cover the R&D and marketing expenses involved in creating a console market. A hardware manufacturer spends millions of dollars developing, designing, and advertising its format around the world and could never hope to recoup its investment through hardware sales alone. This is because console manufacturers sell their hardware for the lowest price possible, leaving no room for profit-making margins for either itself or retail. The hardware is almost like a loss leader, tempting the consumer into a market. This is why establishing a healthy installed base is so key to hardware manufacturers. Then, once a company has its machine in enough homes, the focus becomes maintaining control over the software market.

So Sony, Nintendo, or Sega gets a consumer to spend \$100 to \$300 on a machine and doesn't make any profit on the sale. But the machine needs feeding — and that's where the console companies make money. They do this by insisting that all software is manufactured by them (or by "approved" companies via them). They then charge publishers a



Once a company has its machine in enough homes, the focus is on maintaining control over the software market

fixed price for finished goods and a royalty rate on unit sales. So, every time Electronic Arts, Virgin, Acclaim, or any other independent software publisher sells a game for PlayStation, Sony makes money. Sega makes money on all Saturn sales, and Nintendo makes money on all Nintendo 64 sales — whether it has produced the game or not.

On top of this, the system also gives the in-house lineup of software a huge advantage. Because they don't subject themselves to the manufacturing and royalty rate (they only have to pay what it really costs to make the software), Sega, Sony, or Nintendo can either charge less for their games or charge the same but spend more in the development and marketing stages. That's why a third party could never produce a game like *Mario 64* and sell it for \$70. It simply couldn't afford to. And that's why Nintendo will continue to take a huge slice of the software market for its own machines.

The question of value for money in the console arena comes down to how much it really costs to manufacture software. Publishers we spoke to estimated that in an open market (one more resembling that of the PC), they could produce PlayStation software for

...AND THE NIGHTMARE FLOP

If money can't buy love, it also can't guarantee a blockbuster videogame hit



he Expensive License Plan

The Nightmare Flop usually starts with an expensive license from a major new movie like, say, *WaterHawk* co-directed and produced by Bruce Willis and Kevin Costner. The film studios are often reluctant to sell off their properties in pieces, so publishers have to buy the worldwide electronic entertainment rights across all formats. This could involve a non-refundable down payment of up to \$5 million and royalties of 5% to 10%. The initial payment and the royalty rate demanded by studios have come close to doubling over the last few years.

To produce a strong game that won't ruin the publisher's relationship with the studio, a big-name, third-party developer is retained to write the game. The developer demands a royalty rate of 30%. The game goes on to cost \$5 million to develop. The publisher also green-lights a massive marketing campaign with a worldwide budget of \$10 million.

It decides to release the game first on a cartridge-based console. The console manufacturer needs six months to turn

the code into finished product and so the publisher has to estimate how many units it needs for the launch long before the game is ready. Lacking enough stock to fulfill demand is a major fear (if the publisher doesn't have enough product it will take the console company another six months to turnaround reorders, by which time the demand will have disappeared), so the publisher orders big, 500,000 units at \$30 a pop. The payment is due up-front and is non-returnable. Before it's even released, the company has now spent \$35 million on the game.

Then, the sure-fire hit movie misses and misses big. The license is now more of a stigma than a benefit. And the big-name developer who made its name while lean and hungry has grown flabby and complacent and delivers a dog of a game which then receives the reviews it deserves.

The aftermath is that the publisher's warehouse is full of copies of a game it wants to sell to retail for about \$50, but that retail knows it won't sell at half that price. This is the risk a publisher faces every time it commits to a big game. It makes the game market a dangerous place and creates a climate of fear in which taking a risk on pricing is far from the top of publishers' agendas. And this threat of financial ruin is what keeps the games market in a constant state of cannibalization.

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around \$3 per unit (20% of the \$15 charged by Sony). The consensus on Nintendo 64 cartridges was that publishers could do the manufacturing job themselves for around 25% to 30% of the price charged by Nintendo. That would bring the cost of goods down from \$30 or \$35 to around \$10. So, on consoles, the truth is that third-party publishers can't afford to cut the price of their software independently. The only way they could move is if the console companies themselves charged them a more realistic price for manufacturing and duplicating. In other words the high prices of games on the Nintendo 64, PlayStation, and Saturn are down to Nintendo, Sony, and Sega respectively — and the power to change things is in their hands.

The success of PlayStation has put Sony in a unique position. Having recently announced price drops in hardware and first-party software, a break may soon be coming for third-party PlayStation publishers. Sony reportedly told publishers that the R&D and launch marketing costs of PlayStation had now been "expensed out." This could



Publishers could manufacture N64 cartridges themselves for around 25% of the price charged by Nintendo

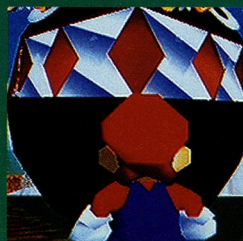
mean a reduction in the royalty charged to publishers which could then be passed on to retailers and, subsequently, consumers. Economies of scale are also coming into the equation for PlayStation as the machine's global installed base is now well past 10 million (and will probably be at least double that by Jan. 1, 1998). The company might also want to accentuate its one true advantage over Nintendo 64 — software price. Some pundits predict that the average price of a new release on PlayStation could drop to as low as \$35 or even \$29 over the next year or so. Certainly the recent announcement to put a \$49 cap on first-party titles and create a line of budget software points to Sony's desire to take advantage of this strength.

One of the regular fall-back arguments that publishers use to defend high prices is that when you compare the amount of time spent playing a game to the amount of time spent playing a CD or watching a film, you're actually getting good value. A Nintendo spokesman commented

BREAKING ALL THE RULES

Mario 64 defies both traditional gameplay and business models

Mario 64 is said to have cost Nintendo \$30 million to develop. This makes it the costliest game ever produced. Yet, for many different reasons, the game isn't such a significant landmark in the budgets or prices of videogames. To start, *Mario*



Super Mario 64 is an example of the kind of game that only a hardware manufacturer such as Nintendo could afford to make



64 was developed at the same time as the Nintendo 64 hardware, so it's not clear how much extra R&D cost was incurred by writing to a machine that didn't actually exist. Secondly, *Mario*

64 doesn't have to make money for Nintendo. It just has to be good. It's primary job is to show just how fantastic the N64

experience can be, providing consumers with a reason to

buy and other developers/publishers with a standard to aim for.

Undeniably, it's done its job brilliantly and if \$30 million could kick-start a market that could be worth

billions of dollars to Nintendo within two years, it's money well spent. Also, Nintendo can afford to commit such funds to a software project because, unlike third-party publishers, it doesn't have to pay a premium price for manufacturing and duplication once the code is complete.

If an independent software house presented Nintendo with a game as big as *Mario* for N64, it would probably sell for around \$100 just to break even, let alone make any sort of profit in order to recoup the \$30 million development budget.

recently: "Nintendo 64 games can take over 100 hours to complete. You'd expect to pay more for a festival lasting two days than for a concert lasting two hours. Longer train journeys cost more than short train journeys." But this is chillingly cold logic. If we carry on the comparisons with other entertainment industries (discounting railway travel for a moment), there are people whose views, personalities, and lives have been shaped by *Catcher in the Rye*, *Exile on Main Street*, or *Citizen Kane* — each one a "product," for want of a better word, that can be returned to again and again over decades.

These outstanding works of 20th Century art have been literally invaluable to people, but it still doesn't mean anyone should pay much more than \$20 for a book, \$15 for a CD, or \$7.50 to see a movie. It's a question of what feels right. We are talking about *games*. Games are little things, fun things, and relatively inexpensive things. A \$70 price tag just doesn't sit right on something called a game. Perhaps that's why those operating within the game market now refer to it as



We're talking about games. Games are little things. A \$70 price tag just doesn't sit right on something called a game

"the interactive entertainment industry." Bottom line: they can call it neuro-bio-astro-cybertronics or they can call it Brad, the only thing players care about are good games — and very few people feel comfortable spending over \$50 on a game.

However, gamers may have to. By now, the economics of game development, while not set in stone, aren't very flexible. Are game companies ripping you off? No, not really. Not as long as "interactive entertainment" remains outside the mass market. While it may not feel right to spend over \$50 for a game, in most cases it's the consumers who are making things rough on the game companies. With each new generation of software, gamers are demanding more and more "magic," and that magic costs money to produce. Are game companies making a profit? Yes, some of them are, but there's a difference between making a profit and gouging consumers. Considering the enormous financial risk required to join the game market, it hardly seems unreasonable for them to expect a healthy return on their product. ng

SO WHO'S GETTING RICH?

Need final proof you're not getting ripped off? Check out the publishers' accounts

One argument that defends publishers in the face of "rip-off" allegations is that very few of them are making serious money at the moment. In fact, some of the biggest and best known are losing an awful lot of money.

Acclaim, for instance, posted staggering losses of \$221 million for the year ending September 30, 1996. MicroProse lost \$40 million for the year ending March 31, 1996, and Mindscape lost around \$50 million during the 1996 calendar year. Viacom recently announced it is putting Virgin Interactive Entertainment up for sale. VIE lost \$14 million in 1995 and is expected to announce similar losses for 1996 shortly. Time Warner has also divested itself of the majority of its game market interests over the last 18 months.

Some of the world's largest media companies were tempted into the market partly by the high retail prices charged for software. Many are now exiting the industry in a big hurry after finding that, despite price tags of \$45 to \$75, it's actually very difficult to make money from games.

Conversely, the only company to regularly make good money from computer and videogames over the past five years

is Electronic Arts, a publisher with a critical track record second to none and possibly the last company any consumer would accuse of ripping people off.

In the end, it may seem that game companies are faced with no greater problem than counting their money, but reality suggests a much more dismal picture. Making money in this business is tough, and no gamer should begrudge the money you spend — as long as you believe its worth it.

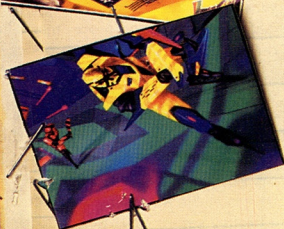


Acclaim is one of several, once-successful videogame companies now losing money at an alarming rate

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Well, it is not! This naked, ~~shameless~~ exploitation of gamers has gone on far too long. Rise up! For we have created the ultimate instrument of change: the PowerVR technology. And we declare that the true console game experience on the PC will be our domain.



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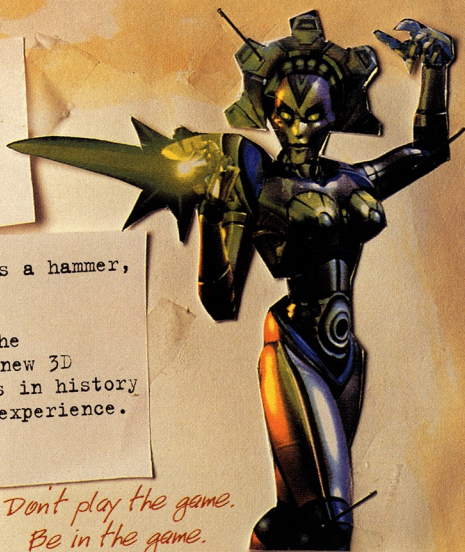
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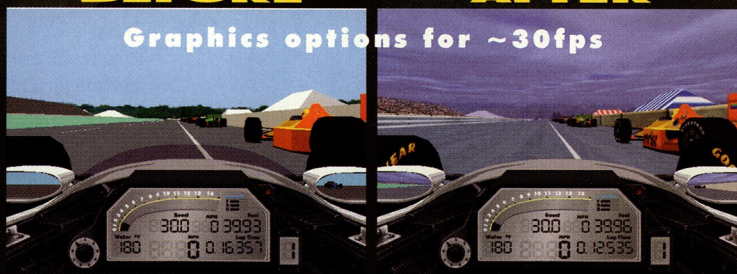
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INTERGRAPH

The State of Play

Videogames are better and cheaper than ever, and they are definitely here to stay. Next Generation takes a look at where the future will take each platform in the years to come...

Back in 1994, things were looking decidedly bleak for the home videogame industry. In essence it had become polarized into two factions — Genesis and Super NES — and both were fighting over the lion's share of a rapidly dwindling kiddy market. Sega and Nintendo were two companies going nowhere fast.

Four years later, the story couldn't be more contradictory. Arguably, Sony revitalized the market, pushing its way in with some serious cash and one of the most effective marketing campaigns of the last decade. By using bold marketing techniques and delivering grown-up content, the company reached out and touched a twenty-something audience with money to spend and a nostalgia for gaming. The message: videogames are as worthwhile a pursuit as music, television, or movies... The result: a mass of gamers returned to the fray and, judging by the sales figures, hasn't even begun to look back.

Choice has also played a major part in bringing people back to gaming. Both Saturn and PlayStation boast a wealth of excellent titles, and Nintendo 64 is rapidly catching up. At the same time, technological advances have finally turned the PC into a credible gaming machine, more than capable of holding its own against consoles. The level of competition in the current market is unsurpassed and, as that competition grows, the quality of software inevitably increases and the price of hardware drops.

But what does the future hold for each platform? How long can Saturn, PlayStation, and Nintendo 64 all coexist in an intensely competitive market? In this story, **Next Generation** considers each of the technologies in turn, weighing up their pros and cons and asking industry experts how much juice is left in today's hardware. The future is almost here...

Nintendo 64:



The start of a long journey

Some of Nintendo 64's software is great.
When will we see more?

Nintendo's alliance with computer-visuals powerhouse Silicon Graphics ensured it an immediate edge over its 32-bit-focused competition when it re-entered the console market with 64-bit hardware on June 23, 1996. The machine got off to a healthy start in Japan but really got into stride when it launched in the U.S. on September 30, where a sales period of 13

Nintendo 64's custom R4300 CPU affords the machine access to a wealth of features — notably mip-mapping and bilinear filtering

weeks saw the system accounting for over half a billion dollars in retail sales after 1.75 million units shifted. It officially became the fastest-selling console in history. Moreover, retailers told Nintendo at the time that they could have sold another 750,000 units had supply met total demand. In the U.K., the 20,000 launch units found their way into eagerly grabbing hands in no time.



DMA Design's *Body Harvest* could be great. Miyamoto mulled over gameplay with the development team

Nintendo 64's custom R4300 CPU, coupled with its Reality Engine co-processor, affords the machine access to a wealth of features — notably anti-aliasing and bilinear filtering — that developers can call upon with ease. The imagery the system is capable of projecting has become the new benchmark in home videogaming, and this inherent power has given it the obvious advantage over its current competition and, arguably, the potential to become the most popular system in the next couple of years as it battles with 32-bit systems.

Most importantly, though, Nintendo's in-house

Tech Specs

CPU
MIPS 64-bit RISC custom
R4300 running at 93.75MHz

Reality Engine co-processor
64-bit RISC processor running
at 62.5MHz
**Built-in RSP (graphics and
sound processor) and RDP
(pixel-drawing processor)**

Memory
36 Mbits Rambus-designed 9-
bit DRAM (4.5MB), maximum
transfer rate: 4,500 Mbits/sec

Resolution
256x224 or 640x480 with
flicker-free interlace support

Color
Maximum 16.8 million colors
32-bit RGBA pixel-color frame
buffer support
Standard 21-bit color output

Audio
Stereo 16-bit PCM
64 channels at 44KHz

Benchmark performance
Main CPU clocked @ 125
MIPS
Graphics co-processor clocked
@ 100 MFLOPS (millions of
floating point operations per
second)
100,000 polygons/sec with all
hardware features turned on



The factor that will see Nintendo through in the face of increasingly tough competition from Sony is first-party software such as *Star Fox 64*

development teams have delivered gameplay experiences to do justice to such powerful technology. *Super Mario 64*, a game so ambitious that it could have been a disastrous affair had it not been honed to perfection over some five years, is already the stuff of videogame legend, and at least half a dozen games set to appear this year should send heads spinning once more. John Whyte, head of development on DMA Design's Nintendo 64 title, *Body Harvest*, believes the "N" factor to be a big reason behind Nintendo's 64-bit success: "I think Nintendo 64's strength is simply the fact that Nintendo is producing software for it. I've never seen anyone produce a game with the amount of thought and design that Nintendo puts into its own software."

It has been said that Nintendo has come up with the perfect package for anyone in the habit of whiling away their hours fixated with shoving pixels around a television screen: the leading hardware specs; the killer apps; unrivaled joypad support as standard; the unique control interface;

the feeling that you're actually jet-skiing."

"Or look at the four-player option in *Mario Kart 64*. Players have their own view windows, without losing any of the graphic quality of the one-player mode. And the four-player version of *Star Fox 64* is even more incredible. It's something you can't do on other systems, not without throwing frame rate out the window."

"In the long run, Nintendo 64's biggest strength is its programmable graphics engine. By providing updates to the microcode, Nintendo can add new features to the software library. Developers have only just started to explore the vast capabilities of the system. There are incredible things yet to come."

Updating microcode is all very well, of course, but the third-party development houses on the receiving end have to be up to the task of making effective use of it. Though Nintendo 64 has already seen some revolutionary titles — without which, it must be said, it would not have enjoyed the level of

As technology increases in complexity, the framework of game design and development expands accordingly — a factor which could hamper the potential of software

future-proofing — it's all there.

Steve Okimoto, a software engineer at Nintendo of America who's responsible for providing technical support to third-party Nintendo 64 developers, sees the machine's most obvious strengths as "its graphics and the creation of videogaming's first real-time three-dimensional worlds. Just as important as the graphics are the gameplay features of Nintendo 64 — everyone looks at *Wave Race* and 'oohs' and 'aahs' over the realistic-looking waves, for example, but you've got to have the controller in your hand, sliding through a turn, to feel how the waves actually buffet your watercraft, to give you

success it has — there have also been some decidedly lackluster games (most famously *Cruis'n USA* and *Mortal Kombat Trilogy*) to dampen owners' spirits (see "Is Nintendo Breaking Up?" in **NG 29**).

Obviously, as technology increases in complexity, the framework of game design and development expands accordingly — a factor which could hamper the potential of software on power-heavy machines such as Nintendo 64. "The Nintendo 64's biggest weakness is just the flipside of its strongest attribute," believes Okimoto. "It requires a top-notch developer to produce a high-quality game of the caliber of a *Super Mario 64*. Nintendo has provided developers with all of the

ng special



Taking Control

Uniquely, Nintendo 64's joypad, like the console itself, has been designed to be upgradable. The port on its underside enables it to take Memory Paks which can be used to save game positions and also game performance data. A good example of the latter use is in *Mario Kart 64*, where players can save best-lap data and give their Memory Pak to a friend who can race against their ghost image.

Plus, "accessories such as the Rumble Pak will add new dimensions to the gameplay experience, with the addition of tactile feedback," claims NDA's Steve Okimoto. "There's been a lot of interest from developers who are eager to support the Rumble Pak in their games."

"I don't think Nintendo 64's joypad is revolutionary so much as evolutionary," says DMA's John Whyte. "In the future we'll no doubt see a lot of gimmicks based around the joypad, but I'm also sure that we'll see a lot of revolutionary ideas make their way into the mainstream..."



Mission Impossible (top left), *Zelda 64* (right), and *Top Gear* are destined to enrich 64-bit gaming



flexibility of many versions of microcode, video modes, rendering modes, and audio configurations; it does leave the developer with many choices. Deciding which options make the most sense can be a hurdle for developers to overcome. We figured a more flexible environment, instead of a very restrictive environment, would be a good trade-off in the long run."

"To begin with, getting to grips with the hardware proved difficult," says Whyte. "Any new system is going to have teething troubles as far as development is concerned and this was no exception. But once the developers are aware of and can use the capabilities, it makes the whole process pretty straightforward. The hardest part for developers is going to be matching the quality set by Nintendo with *Mario 64*, and that's a matter of design more than anything."

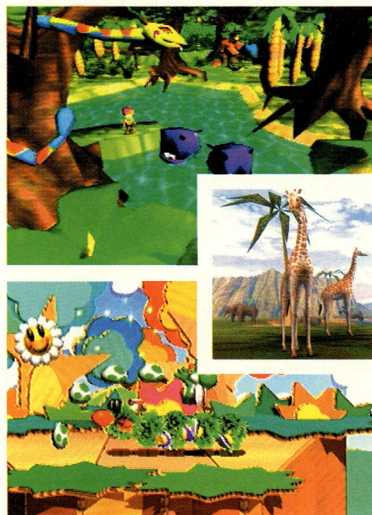
So when will gamers begin seeing Nintendo 64's potential being reached? "It'll take a long time," reckons Okimoto. "Many of the early development problems lay in the flexibility of the hardware. But this flexibility is also the machine's biggest strength. It's impossible to estimate what potential the machine has until we actually take the time to dig deep into the hardware, and that kind of thing takes time — but is generally worth the wait. It's kind of similar to the Amiga situation, where the hardware could be made to do all sorts of tricks that the original designers would never have even thought possible."

Nintendo 64's detractors would point the finger at lack of third-party support and consequently a relatively meager software library

as two factors that will hamper Nintendo's chances in beating off its strongest rival, Sony. But the company doesn't look likely to change its "quality, not quantity" stance. Nor is the third-party community likely to give it the chance to change it.

Another controversial factor is Nintendo 64's use of cartridges. "There were a lot of people in the industry who were absolutely amazed that a game environment as vast as *Super Mario 64* would be able to fit in a cartridge," says Okimoto. "But Nintendo was able to pull it off. And with cartridge size rapidly approaching 16MB, there's still plenty of room left for growth." He does, however, recognize that large-scale storage capacity has a valuable place in videogaming: "[By praising cartridges] I don't mean that games wouldn't benefit from even more data space. With eight times the capacity of *Super Mario 64*, 64DD games can feature much larger levels, more texture maps, more audio tracks."

"The 64DD's biggest contribution will be its



From top: *Mother 3*, *Creator*, and *Yoshi's Island 64* make use of the unit's writable capacity

ability to write back data to the disk. The implications in terms of gameplay are tremendous. Current RAM sizes max out at about 32MB. With up to 38MB to save data on the 64DD, game creators will have the ability to record whatever information they want. This can

of 3D gameplay beyond those of *Mario 64*. But what else can gamers expect from the 64DD? "I think it'll probably just lead to a more diverse selection of titles," says Whyte. "You'll still get the same type of game you get now, but you'll also see products that make use of the portable storage

Nintendo is not about to drop cartridges upon the arrival of the 64DD, even though the peripheral is expected to sell better than any console add-on in history

include new characters, new levels, new textures, new puzzles, whatever the creators can dream up. And with the equivalent throughput of a six-speed CD-ROM, the 64DD will be able to pull this data off the drive in a flash. A ton more space, with no waiting."

Whyte is similarly optimistic about the add-on: "I think the 64DD's a good idea. Having a large writable medium isn't something which has been tried with console games before, and I think Nintendo is going to make pretty good use of it. As far as third-party games go, it'll make porting over some of the heavyweight PC games an awful lot easier."

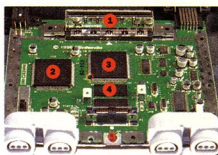
Nintendo is not about to drop cartridges upon the arrival of the 64DD, even though the peripheral is expected to sell better than any console add-on in history, with every fanatical Nintendo 64 user already itching to get their hands on the unit thanks to its launch title, *Legend of Zelda 64* — a game set to push the boundaries

medium in ways that don't make sense to do on a cartridge — painting programs, for example."

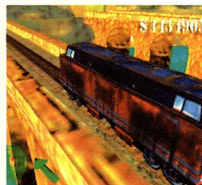
But do console owners want painting programs? Well, perhaps not (although Nintendo has confirmed an Nintendo 64 version of *Mario Paint*), but the flexibility of the 64DD medium will give console-game developers the freedom to move in other new directions, too: Software Creations, for example, is producing *Creator*, an astoundingly freeform, brave new "game" direction. Most importantly, the keyword with 64DD software, no matter how diverse, will remain "entertainment."

Despite its detractors and the unknown quantity lying ahead of it in the form of the 64DD, Nintendo 64 seems certain to find itself a place in millions of homes around the globe. After all, as Okimoto puts it, "There is only one *Mario*, and he belongs to Nintendo. And if you want *Donkey Kong*, *Zelda*, or *Star Fox*, you have to have a Nintendo..."

Examining the Power Station



1. Nintendo 64's central connector slot accepts cartridges and also extends through to the PCB's underside where it will serve as an expansion port for the 64DD mass-storage device. This section is the entry point to all of the system's internal technology.
2. Nintendo 64's CPU is a 64-bit MIPS custom R4300 CPU running at 93.75Mhz. Unlike an unaccelerated PC, the ultra-fast operation of this chip is unhindered by a heavy graphics overload.
3. The much-vaunted Reality Engine co-processor is a re-engineered version of the multimedia engine designed for high-end SGI work stations. Running at 62.5 MHz, it's divided into two parts: the Reality Engine Signal processor (which calculates all the geometry) and the Reality Display processor (which draws everything to the screen).
4. Nintendo 64 contains 4MB of Rambus-designed DRAM. This unified memory system is shared between sound, game logic and graphic data, and will work in conjunction with extra 64DD RAM in future.



Blast Corps, from Rare, is certainly among the prettiest third-party efforts to date, and it could join *Turok* in being a good independent title. Nintendo's relationships with external developers will help ease pressure on internal developers



The People's Choice

PlayStation is the surprise contender. Where did it come from and where is it going?

It is difficult to believe that, merely three years ago, Sony's role in the videogame industry amounted to little of significance. Sega and Nintendo were still dominating the home videogame industry, and rumors of the PlayStation's development were met with cautious optimism rather than outright excitement. As CDI from Philips has proved, the game industry can be very unkind to inexperienced companies looking to breeze in with new machines.

Thanks to killer apps, effective marketing, and well-designed system architecture, PlayStation is the most successful next-generation console

Nevertheless, thanks to some effective marketing, well-designed system architecture, and several killer apps, PlayStation is now the most successful next-generation console in existence; according to figures released by Sony

two months ago the machine has an installed U.S. base of close to 4 million, while in Japan it has reached 5 million. In Europe the figure is 2.2 million, 700,000 of which is represented by the U.K. market.

The company's first push into the videogame hardware market appears to have been embraced both by children and the new and highly lucrative twenty-something sector — a market almost single-handedly nurtured by Sony through its involvement with the clubbing scene and the lifestyle press. In response, developers have been quick to embrace the machine and consequently nearly 800 games have now become available.

The question is, of course, can PlayStation survive in the face of competition from 64-bit machines, both in the form of existing hardware from Nintendo, and the much-vaunted Matsushita technology waiting in the wings?

Inevitably, Sony is optimistic. "The growth in the sales of PlayStation and the arrival of more and better games are making PlayStation the

brand for gaming," says Juan Montes, SCE's general manager of software development. "I foresee that in 1997 and future years we'll enter a much faster growth than we've seen so far based on the price and acceptance of PlayStation and its games. Playing games — at least PlayStation ones — has now gone beyond the traditional children's and teenager's market. PlayStations are being acquired even by people who had never considered playing games before.

The console has repeatedly sold out in Japan, confirming its continued popularity, and support from major software development resources is guaranteed

Obviously, there'll be an evolution of the platform based on the success of the machine, but it's too early to talk about it while there's still more juice left in the current platform."

This level of confidence is certainly backed up by the amount of software the machine is attracting. Most major publishers have pledged their support for the format indefinitely and a forthcoming batch of triple-A titles, including *Resident Evil 2* and *Tomb Raider 2* will do much to retain consumer interest. Plus,

PlayStation has the backing of one of the game industry's hottest tickets — the *Final Fantasy* brand, delivered by Square. The seventh installment, which has recently stormed the Japanese market, is not only the most ambitious project yet attempted on the machine (consisting of three CDs stuffed with rendered graphics), but it is also a figurative victory over great rival Nintendo — such a project would have been impossible on Nintendo 64.

PlayStation's huge user base is another reason to be optimistic about its future. The console has repeatedly sold out in Japan, confirming its continued popularity, and while people are still buying both hardware and software en masse, support from major software development resources is guaranteed. The young adult market that the PlayStation is targeted at might not be quite so capricious as the children who have previously been the focus of hardware manufacturers.

However, given its two-and-a-half-year-old technology, the future is not exclusively bright for the PlayStation: it is no longer the most powerful machine on the block. Its 33MHz CPU, for example, was cutting-edge three years ago but is eclipsed entirely by the 93.75MHz offered by Nintendo 64 and the even more convincing twin 66MHz set-up powering the M2.

In effect, PlayStation just doesn't have the capacity to deal with complex math as quickly as the 64-bit consoles and modern-day PC hardware. When it comes to converting PC games (some which rely heavily on complex game logic and heaps of RAM, such as Bullfrog's long-awaited *Dungeon Keeper*, for example), Sony's console could be at a severe disadvantage.

In terms of graphics processing, however, developers are finding their way around such limitations. According to Derek Leigh-Gilchrist at Core Design, "PlayStation developers are overcoming the lack of processing power by specifically optimizing their game engine code into R3000 assembler. I'm currently converting *Ninja* from Saturn to Playstation with [Core coder] Dan Scott, which has involved taking a lot of C code across from Saturn and modifying the 3D-specific

Tech Specs

CPU, hosting four components: the 33MHz R3000A, the 66MIPS geometry transfer engine (GTE) which takes care of polygon manipulation, the Direct Memory Access (DMA) controller and the MDEC hardware

Operating System ROM: initiates the boot-up procedure when the machine is switched on

Graphics Processing Unit (GPU): handles everything that is drawn onscreen and takes data from the CPU and passes the results on to VRAM

2MB DRAM (main RAM): everything from CD is streamed into here, before dispersal to VRAM and Sound Ram

1MB VideoRam (VRAM): stores the current frame buffer and enables a picture to be displayed onscreen

16-bit sound processing unit delivering 24 channels of ADPCM at 44.1KHz. Digital effects include looping, enveloping and digital reverb

512K of sound RAM: games load sampled waveforms into here and the sound system can access them at any point in a game

CD Controller: contains a CD ROM-XA converter (allowing up to eight simultaneous streams of mixed audio and CD data) and buffer RAM.

DSP (Digital Signal Processor) for CD drive: reads incoming information from the CD and sends it almost instantly to the main RAM

16bit digital audio converter: converts digital sound data into analogue so that it can be played through speakers

Video decoder and encoder: NTSC or PAL signal decoder which sends the signal to the TV



From top: *Resident Evil 2*, *Final Fantasy VII*, *Dracula X*, and *Runabout* are part of Sony's impressive library

Video Playback

One of PlayStation's strongest features is its proprietary video compression hardware, MDEC. The unit, which is integrated directly into the machine's R3000 CPU, gives high-quality full-screen playback (or letter-boxed playback at 30 fps), meaning prerendered and FMV footage is smooth, crisp and well-defined.

Those who are taking full advantage of MDEC are reaping some visually stunning rewards — Namco, for example, has used the technology to great effect in its legendary *Tekken 2* and *Rage Racer* intros. The problem is, many other developers are not exploiting the full potential of the unit. Instead, they are importing rendered footage straight from the PC to PlayStation, resulting in jerky playback.

There is no doubt that pre-game presentation and in-game cutaways have become a vital part of software development, just as there is no doubt Sony will have to emphasize every unique trick PlayStation has if new punters are to be enticed away from Nintendo 64. Consequently, it can only a matter of time before other developers are forced to catch on to the prospects offered by this hardware.



Krazy Ivan (top) and Rage Racer feature rendered intros that use the MDEC hardware

An interview with Juan Montes

The general manager of software development at SCEE believes in PlayStation's future

Next generation: Just how much untapped potential is there left in the PlayStation hardware?

Juan Montes: I guess that each of our 250+ PlayStation developers would give you a different answer depending on what they learned by the end of the last project and what they did not have time to implement in their game. From the 200 games that have been published so far in Europe, my view is that very few games — say, eight to ten — have come close to using 75% of the potential of the platform. During 1997, we'll see a few more games reaching these levels but they will still be in a minority. In 1996, for example, *Shootout NBA '96* was considered one of the more advanced games in the use of the features of the PlayStation, technically speaking. In 1997, we've made significant improvements to the game and pushed the machine quite hard, but even now, after the end of the project, we know we can still push the envelop further. *Porsche Challenge* is another example where we've produced an excellent racing experience with a higher level of realism than previous games, and there's still more gas left in the tank. To help untap more of the potential that's available, SCEE will be offering more Program Analyzer-style development tools to our licensees in the future.

NG: Will the PlayStation's lower processing power and relative lack of memory hamper the machine's competitiveness in the coming year?

JM: The potential of a game machine needs to be judged in terms of its graphics, sound, processing, and storage capabilities. These need to be built using an architecture that is highly flexible and balanced to avoid bottlenecks and ensure that strengths in one area do not compromise others. The PlayStation was designed for the games of the late-'90s in mind and as such it has a purposely designed parallel architecture where its custom graphics and sound chips work cooperatively with the main processor and the CD drive that is an integral part of the architecture. You cannot measure the power of a machine by just looking at one of its components; you need to look at the complete design and its suitability to the software that will run on it. And based on this I think that PlayStation is still positioned as the best game console in the market. Looking at the Nintendo 64, I've not seen any games that demonstrate capabilities beyond the PlayStation. Is being able to display blurry, pinky, smoothed polygons a demonstration of 64-bit technology? By the way, 64-bit processors have been around for at least four years in the computer industry and the fact that today practically no office or

home computer runs on them tells you that they are not the solution for all processing needs. Today's and tomorrow's games will need to be immersive and have a realistic feel to them. They'll also need to provide entertainment experiences that go beyond those provided by 16-bit games. To achieve this at a reasonable cost requires CD storage. I guess better testimony to this is the fact that the biggest independent developers of games in Japan, Square Soft and Enix, have chosen PlayStation as the console for their future developments. As far as comparisons with the PC, which configuration should be talk about? The new ones are £1,500 (\$2,000), and the next come in at £2,000 (\$2,500). For just game purposes so far I haven't seen a PC title worth buying that isn't feasible or even also available on PlayStation.

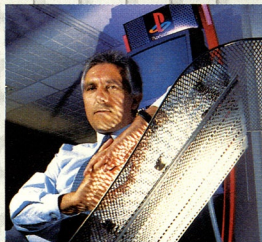
NG: What does the PlayStation have to offer that N64 and the PC don't?

JM: Its architecture makes it possible for any game idea to be realized on PlayStation as a cost-effective entertainment product. The PlayStation has already demonstrated some of its capabilities through the 200 games that have been released in Europe, and there's more to come. I can't comment about N64 as we haven't seen that many games in the market, and the few that have been available so far do not show any innovation in technology. *Mario* is a good platform game, but that is not a new generation of

platform gaming. I'm still waiting to see a good sports game with a high level of realism which is playable by eight players at the same time. I guess N64 will also not have high-quality productions such as Square Soft's *Final Fantasy VII*. As far as the PC is concerned, it's not a plug-and-play games machine. It can play games but by the time you have the graphics card, sound card, and joystick you could have bought many PlayStations. It's interesting that you can now buy a PlayStation for the same money that you pay for a CD-ROM drive or a graphics card! Also, have you tried playing PC games with several players on the same computer at home?

NG: How will the PlayStation survive beyond '97?

JM: 1997 will make the PlayStation the natural companion to the VCR in many homes. The new price, the peripherals that will be introduced, and the new games coming out this year will make PlayStation the game console brand of choice in the market. This year we'll also see games that will push the envelop not just in technology terms but also in creativity and entertainment. This accomplishment is not just a credit to the platform but also to the many developers that are working to exploit its capabilities in their new games.



"I think that PlayStation is still positioned as the best game console in the market"

bits to use the GTE [Geometry Transfer Engine]. This all worked fine, but it still wasn't quite fast enough to run the game at 30 frames per second, so I then converted the C code into optimized R3000 assembler with inline GTE code, which halved the processing time. *Ninja* now easily runs in 30fps and has enabled us to start adding more detail to the game environment."

PlayStation's lack of onboard memory may also prove problematic, though. While the

"There's a huge amount of untapped potential in PlayStation. It does take at least two generations of software before people get to grips with the hardware, the classic case being the Super NES. *Donkey Kong Country* came out, four years after the Super NES first appeared, and nobody expected it."

"Equally, Sony keeps telling the development community little hidden secrets about the hardware to keep us innovating, and we're learning

"Technical details are much less important than gameplay. All that PlayStation needs is someone to concentrate on gameplay rather than graphics for a change"

machine's GTE is a marvelous piece of hardware, and has arguably been the driving force behind the massive uptake of 3D game development, its ability to throw textured polys around the screen is severely hampered by the measly 1MB video RAM allocated to it.

Once again, though, Leigh-Gilchrist believes the problems can be compensated for with inventive coding: "Lack of memory is an issue, but with clever use of hierarchy animation systems and mip-mapping, it shouldn't cause too much of a problem in the coming year."

Importantly, there is a pervading belief among developers that PlayStation still has a few undiscovered tricks up its sleeve. As Tim Heaton, software manger at Gremlin, says,

all the time." Leigh-Gilchrist agrees, but is more guarded on the issue: "There is a fair amount of untapped potential, but using the extra potential often involves limiting your engine in some way — limiting camera angles, positions, and so on. I think we'll see a lot of really cool games with engines "tuned" for maximum PlayStation performance."

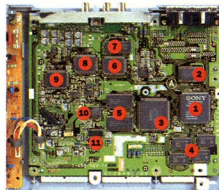
With worldwide support for

PlayStation still strong, it is hard to imagine the machine losing its position of prominence this year. Beyond 1997, the picture becomes more hazy. Hundreds of PlayStation games are currently in production which probably won't see the light of day until mid-1998, guaranteeing the machine a healthy life for at least another two years. However, the technical shortcomings of the machine in comparison to weighty 64-bit competitors are bound to be revealed in the near future. Leigh-Gilchrist, for example, points toward the machine's lack of Z-buffering and perspective-correct texture-mapping as factors which will count against the machine in terms of visual finesse.

But, as Leigh-Gilchrist puts it, "An important thing to remember is that technical details are much less important than gameplay. All that PlayStation needs is someone to concentrate on gameplay rather than graphics for a change..."

ng

Under the Hood



1. CPU, hosting four components: the 33MHz R3000A, the 66MIPS geometry transfer engine (GTE) which takes care of polygon manipulation, the Direct Memory Access (DMA) controller and the MDEC hardware
2. Operating System ROM: initiates the boot-up procedure when the machine is switched on
3. Graphics Processing Unit (GPU): handles everything that is drawn onscreen. It takes data from the CPU and passes the results on to VRAM
4. 2MB DRAM (main RAM): everything from CD is streamed into here, before dispersal to VRAM and Sound RAM
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8. CD Controller: contains a CD ROM-XA converter (allowing up to eight simultaneous streams of mixed audio and CD data) and buffer RAM
9. DSP (Digital Signal Processor) for CD drive: reads incoming information from the CD and sends it almost instantly to the main RAM
10. 16-bit digital audio converter: converts digital sound data into analog so that it can be played through speakers
11. Video decoder and encoder: NTSC or PAL signal decoder which sends the signal to the television



Sony has so far released four different versions of the PlayStation (from left): the standard grey model, the white Asia-only model (with enhanced MPEG playback), the programmable Yaroze, and the development blue machine



The Coder's Machine

Does Saturn have hidden potential to help it survive the next-generation wars?

Sega is perceived by many as the biggest casualty of the next-generation hardware war, struggling to hold its market share in the face of phenomenal Sony success and the technical superiority of Nintendo 64. So how did a company as successful as Sega manage to lose so much of its clout in so short a space of time, and is there any chance that Saturn can claw its way back from the poor third position that it now finds itself?

Much of Saturn's chances of survival will rely on keen developers finding new ways to exploit the hardware

Worldwide, the picture for Saturn is reasonably encouraging with the hardware dominating the Japanese market in early 1996 but capturing a disappointing 15% of the U.S. console market. The arrival of Nintendo 64 is unlikely to help Sega, and it won't be long

before Saturn begins to look a little long in the tooth. **Next Generation** spoke to Saturn stalwarts Robert Suh and Michael Persson of Shiny Entertainment, who both previously worked at Scavenger, one of the few third-party developers to really get to grips with the system, and asked, does Saturn have anything new to offer? "I believe Saturn still has a great deal of hidden potential, thanks largely to the complex nature of the hardware design," claims Suh. "You can 'bang on the hardware,' which enables developers to find hidden features of the machine not intended by the hardware designers. With Saturn, the more we bang, the more we find — it's a situation not dissimilar to the way the 16-bit consoles were coded, and as we all witnessed with the later Super NES and Genesis titles, there's always more you can do to push the machine."

Much of Saturn's chances of survival will rely on keen developers finding new ways to exploit the hardware, which does have a number of advantages over PlayStation. Its "Mode 7" facility is particularly useful, as it enables scaled

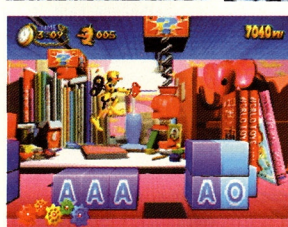
floor-style effects without burdening the CPU with geometry calculations, unlike PlayStation, which has to construct a floor using polygons, which in turn eats into frame rate. Saturn's VDP2 chip can handle five playfields at a time and is largely responsible for the impressive visuals of *Virtua Fighter 2*, which runs in hi-res mode with the chip scaling and rotating the foreground and background fields without the need to address the CPU with any complex geometry. Its partner, VDP1, packs impressive sprite power, too.

In theory, this is where much of Saturn's success could be built over the coming year, as more and more programmers get to grips with the complex, but ultimately powerful, board. "The thing you have to remember about Saturn is that the design lends itself to low-level coding," says Perrsen. "The documentation that comes with the dev kit is directed at giving the programmers assembly-level access to the chips. *VF2* and *Fighting Vipers* showed just how much can be done on Saturn when you do it right. Somebody still needs to utilize the awesome combined capabilities of VDP1 and VDP2 to make a 'real' game — not just a beat 'em up. *Nights* was a pretty good

attempt, but it didn't quite capture the imagination of the mass market."

Nights perhaps best epitomizes the real strength of the machine — the game is fast, smooth, and highly original, but too left-field to really catch on. Consumers would no doubt have preferred yet another *Sonic* title, but Sega's *Sonic Team*, headed up by Yuji Naka, would rather see something different, a move away from the 32-bit staple diet of fighting games and racing titles. For those who persevere with *Nights*, there's much to be gained, including bonus levels, new worlds and objects, imaginative music, and the until-recently-deemed-extinct desire to better a previous score. PlayStation has become a truly ubiquitous mass-market system, and has beaten the Sega machine hands-down in terms of sales and popularity, but Saturn may yet benefit from a certain amount of anti-establishment appeal, emerging as a real gamer's machine. This certainly seems to be the case in Japan, where for almost a year Saturn sales were equal to and, at key points, actually surpassed those of the Sony console.

The Saturn chipset has another strength: it's much faster than PlayStation's. The twin Hitachi processors at the heart of the board should, in



Tech Specs

CPU

Two SH-2 32-bit RISC CPUs
@ 28MHz, each delivering 25 MIPS

Memory

VRAM: 12Mbits
Main RAM: 16Mbits
Sound RAM: 512K
Buffer RAM: 512K
Boot ROM: 512K
Battery RAM: 32K

Video resolutions

352 x 224-704 x 480

Colors

24-bit palette, 32,000 onscreen

Graphics

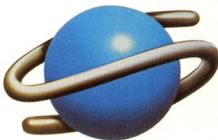
VDP1 chip handles rotation and scaling of multiple sprites. Incorporates dual frame buffer and maps sprites to geometry to form polygons. VDP2 chip handles five simultaneous backgrounds and two planes of rotation. Possible to have three backgrounds plus one rotating background simultaneously.

Sound

16bit 68EC000 processor @ 11.3MHz
Yamaha FH1 processor
FM, PCM, 44.1KHz sampling frequency, 32 voices
DSP 128 steps/44KHz

Data storage

Double-speed CD-ROM drive
Cartridge slot



Astal, *Virtua Fighter*, *Ninja*, *Clockwork Knight 2*, and *Fighter's Megamix* are all games that make good use of Saturn's complex, difficult-to-master chipset. Multiple play fields in *Virtua Fighter 2* and *Fighter's Megamix* enable scalable bitmaps

Virtua Fighter 3

Virtua Fighter 3 will be the most important Saturn conversion to date if it arrives, as Sega hopes, in time for Christmas '97. Due to the advanced nature of the Model 3 coin-op, Sega has confirmed that Saturn VF3 will require an add-on cartridge to boost the polygon and texturing capabilities of the console, but it's not yet revealing how this will work. It's rumored that Model 3 designer Lockheed Martin will be providing a specialized chip or board for the cartridge (possibly a derivative of its Real3D technology destined for inclusion in Intel's Klamath Pentium II board) and that it will feature extra texture memory and RAM.

If successful, the package could pave the way for a host of Model 3 conversions, including the acclaimed *Super GT*, *Virtua Striker 2*, and the rumored *Daytona USA 2* and *Virtua Cop 3*, all of which would help considerably in prolonging the life of Saturn and give Sega the breathing space it needs to prepare for Saturn 2.

But hasn't Sega learned from its experience with the Sega CD and 32X where such additional hardware simply confused and diluted its 16-bit console base? Possibly. However, to keep in the game Sega knows that even if only one game makes good use of the upgrade cart then that may be enough to boost Saturn's profile in the short term. And with *Tekken 3* heading for PlayStation (also spuriously rumored in some quarters to use an upgrade of some kind) it had better make sure it gets it right...



theory, provide as much as 50% more raw processing power than PlayStation's single 33Mhz processor. The problem is that it's incredibly difficult to write code that uses both chips in perfect harmony. Sega's own AM2 division has managed it, but other coders seem to find it almost too much work for too little gain — especially when any prospective third party can virtually guarantee sales by developing for the more popular PlayStation format.

As a fan of Saturn, Suh, and many other

written entirely in low-level code. It will free up the CPU and enable more animation, cleaner textures, and special lighting effects of the kind that most would associate with PlayStation. Sony really holds your hand throughout the development process, and it has a lot of libraries available, but you're fooling yourself if you think that you're going to develop peak-performance, cutting-edge games that way."

As well as either improving libraries, or simply providing coders with more low-level help, there

The repeated cry from many developers is "Why didn't we know about this earlier?" The answer seems to be that Sega had been remiss in providing them with updates

programmers like him, find all this frustrating. The repeated cry from many developers is, "Why didn't we know about this earlier?" The answer seems to be that Sega itself has been somewhat remiss in providing updates and libraries that give third parties access to the advanced techniques employed by its own internal AM divisions.

Until now, that is. Recently, things have improved. Core Design's Jason Gosling is currently coding Saturn version of *Tomb Raider 2* and believes that unlocking the system's many secrets is the key to a brighter future for the machine. "Saturn has improved greatly with the introduction of the Sega Graphic Libraries (SGL)," he argues. "Development time has speeded up considerably, but it still has a long way to go to match PlayStation. The easier it gets to program Saturn, the more inclined developers will be to continue with the machine. SGL is good news, but it must evolve even further, improving greatly with each release. Sega has to listen to developers who are working so hard on Saturn and help them to quickly implement their ideas."

"Development time has speeded up considerably, but it still has a long way to go to match PlayStation. The easier it gets to program Saturn, the more inclined developers will be to continue with the machine. SGL is good news, but it must evolve even further, improving greatly with each release. Sega has to listen to developers who are working so hard on Saturn and help them to quickly implement their ideas."

But will it be too late?

With Nintendo 64 making such great strides, especially in the U.S. where it has already equaled PlayStation's installed base of 2 million, Saturn may need more than just better libraries and the Midas-like touch of AM2 to see it through. Suh sees success written in 100% assembly. It is, he argues, too late to use libraries that have taken so long to arrive that many programmers have simply had to evolve around them.

"Forget about the Sega libraries," Suh scoffs. "They're getting better, but still tend to get in the way now. The only thing that will ensure you success on Saturn is creating a core engine that's

is another, more direct method of keeping up with the competition: upgrade the machine. Sega is understandably cautious and, indeed, tight-lipped about the much-vaunted add-on cartridge that will allegedly bring the incredible *Virtua Fighter 3* to Saturn. After all, the 32X, launched in 1995, was a disaster that cost the company

dearly — not just financially, but in terms of reputation. All those loyal Genesis owners who rushed out to greet the 3D revolution suddenly found themselves high and dry, armed with a peripheral neither powerful enough to go the distance nor popular enough to boast any significant software commitments from Sega or its third-party developers.

Understandably, many greeted the arrival of Saturn with suspicion. For those who bought the previous add-on, the doomed Sega CD, such suspicion was likely to be more akin to open hostility. If Sega is to venture down that path once again, it must do its homework more thoroughly first, and that means providing enough killer apps to make the cartridge upgrade an essential and sensible purchase. To do this, it will need to talk to developers, many of which are still in the dark, despite a proposed winter roll-out for Saturn VF3 package.

"It remains to be seen whether this kind of add-on can save the system," observes Gosling, with reservation. "We still don't know what this cartridge consists of. It could really help the machine if it addresses all or most of the problems that Saturn has development-wise — that is, more video and sound RAM, sound sample compression, a triangle draw add-on, texture pages rather than distorting sprites, transparencies and even z-buffering and interpolation. The problem is, it could all be too little, too late."



Sega needs to do its homework before introducing more add-ons

An audience with **Andy Mee**

European marketing director of Sega who openly admits that 32X was a big mistake

Next Generation: In light of the PlayStation price drop and the launch of Nintendo 64, how will the Saturn compete this year?

Andy Mee: As regards the PlayStation price drop, we have no immediate plans to drop the Saturn price. We've got the pack-in bundle at £199 (\$320), which includes two catalog titles. The £129.99 (\$210) price for the PlayStation is for the bare bones, just the console, and if you consider the value of our pack-in games, then you're getting the Saturn for about the same price. Add to that the 200-plus titles available for the Saturn and I would expect our market share to at least hold and possibly even grow this year. The week that N64 launched here, we sold an extra 200 Saturns on top of our usual monthly sales.

NG: Surely the Saturn can't hold its own against Nintendo 64?

AM: It really wouldn't have mattered this month whether Nintendo had brought 20,000

machines or 40,000 into the U.K. There's a certain element of hardcore gamers in the country who were going to buy it anyway — they've already got a Saturn, a PlayStation, probably still have their Amiga and possibly a Neo Geo. They're hardcore gamers, and videogames is what they do, so they will buy an N64. The real test will come in September/October when they're sitting on maybe four or five titles and we've got something like 250 on offer. And there's the price factor, of course. Nintendo 64 is expensive, and the games are going to be extremely pricey.

NG: The Saturn has had a real problem with quality third-party software, and much of this seems to be down to the difficulty of mastering the complex chip sets, but developers like Core are really hacking the console now and finding new ways to optimize the console. Is it too late?

AM: I don't think it's too late at all, although, of course, it would've been great to have this at launch, but it's a sign that things are getting better. It's great to see people like Core saying, "We've found some new tricks that we didn't think the machine could do," like transparencies. PlayStation, on the other hand, has been developed to the point where they can't get anything more out of it. That platform has been investigated to its limit — and where do they go from there?

NG: But it's nearly two years into the life cycle of Saturn. Couldn't the libraries and support have been made available earlier on?

AM: We've put out as many of the libraries as we could. Obviously, you don't want to put all of your intellectual properties out, but there are libraries now available — the code libraries for *Nights* were available a month after launch, but there are techniques and

code that Japan will want to keep to itself, of course. The Saturn is difficult to program, but you get better results if you stick with it.

NG: This probably hampered the launch — there was a real dearth of good third-party titles. Also, *Virtua Fighter* was quickly surpassed by *Virtua Fighter Remix* — why wasn't that the launch title?

AM: It wasn't ready in time, which is why it would have been better to launch in September. If we'd have been able to launch with eight to ten titles on day one, one of which was *Remix*, then I think things would look very different now. I've gone on record calling PlayStation owners "graphics tarts." That's why Sony beat us with *Tekken*, because it looked the better game, graphically. People go into the shop, they say, "That looks good," and they buy it.

NG: When VF3 is released for Saturn, you'll probably be thankful that those "graphics tarts" are around...

AM: Well, yes, that's true. Having said that, I do think that those videogamers that we've seen come into the next-generation market have broken down into two camps, those with brand loyalty and those without. If you support Manchester United, you're unlikely to swap to City, and by the same token, if you're a loyal Nintendo owner, then you're pretty unlikely to swap to Sega.

NG: True, but then if Man United brought out two different kits within a couple of months, and then announced their real kit shortly afterwards, that might tempt some people to swap, surely? Isn't this what happened with the Sega CD and 32X?

AM: That obviously didn't help us when we launched the Saturn. With Sega CD and 32X, very few people ever gave us the credit for trying to expand the videogame market in '93/'94 when it really needed it. We only got slagged off for them. I admit that we made big mistakes, and 32X was a big mistake in that it wasn't supported by enough third parties, and we didn't get the development kits out in time, and some of those important lessons were missed with Saturn. Instead of gaining Nintendo consumers, we lost loyal Sega consumers. They didn't trust Sega anymore.

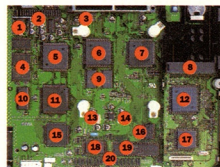
NG: Are there plans for Saturn 2, and will the launch be similar?

AM: On the basis that we're a videogame company, and that we want to be around in five years, and that I don't plan to retire for another 20 years, I think it's safe to assume that there will be another platform. When it is and what it is, I haven't got a clue. As regards the launch, if Saturn 2's launch is anything like Saturn's launch, and I'm still marketing director, then I'd deserve to be shot!

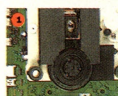


Andy Mee thinks fans of PlayStation are "graphics tarts" who only care about how a game looks

Inside Saturn



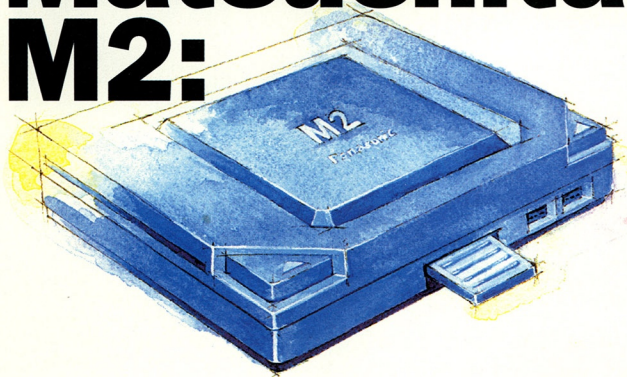
1. Digital-to-analogue convertor
2. RGB encoder
3. Cartridge slot
4. 12Mbit DRAM for VRAM and frame buffer
5. Processor controller
6. VDP1 32bit display processor, sprite processor and texture engine with dual 256K frame buffers
7. VDP2 32bit display processor with scrolling and rotation fields
8. 100pin CD drive board interface
9. 12Mbit DRAM for VRAM and frame buffer
10. 512K sound DRAM for the 68EC000
11. Saturn Custom Sound Processor (SCSP), containing Yamaha FH1 DSP
12. MPEG interface
13. Crystal oscillator
14. Integrated circuit lock controller
15. 22.6MHz MC68E00 sound processor
16. 32K SRAM for battery back-up
17. SH1 processor for managing CD ROM drive and 320K/sec data flow
18. 4-bit system manager and peripheral controller
19. 512K Initial Program Loading ROM: for power-up sequence
20. Connector for joystick /mouse, etc



1. Double-speed JVC CD-ROM drive with 320K per second data transfer rate
2. 16-Mbit DRAM for SH2s
3. Twin Hitachi SH2s running at 28MHz, 25 MIPS each
4. System control unit running at 14MHz
5. Connector for CD interface

ng special

Matsushita M2:



Hit or Myth?

M2 could very well change the way you game. If the machine ever sees the light of day...

On the past two years M2 has undergone a metamorphosis from a scarily omnipotent force to something more akin to a sleeping enemy. Consider the evidence: Matsushita, the world's largest consumer electronics company, pays \$100 million for the exclusive rights to The 3DO Company's M2 technology. With multiple worldwide branding, unrivaled financial clout, and its fingers in every new technological pie, it prepares an assault on the game industry armed with the most powerful videogame technology ever conceived. It looks unstoppable. And yet, two years down the line, there is still no sign of a

With worldwide branding, unrivaled financial clout, and its fingers in every tech pie, M2 prepares an assault on the game industry

working unit or any definable strategy from the company. What's going on?

Next Generation has traced the development of Matsushita's console since it was first being touted as the natural successor to the 3DO platform. However, after getting its fingers burnt from the failed 3DO Multiplayer, Matsushita

now faces a tall order: How to be taken seriously, and more disturbingly, how to release a machine that has already lost a considerable time lead over its forthcoming rivals.

Despite the M2 technology having received a revamp, and despite its undeniable position as the current standard bearer for home 3D technology, there is a lot of skepticism surrounding M2. Many doubt the console will ever be released.

The issue of software

development is perhaps the most galling indictment of Matsushita's handling of M2 so far. While the company said in October that the console would have more titles than were available for Nintendo 64 at launch, it is apparent that few developers are working on titles, and those that do have development systems are reluctant to commit resources to the format until Matsushita makes clear its intentions. Rob Povey, technical director at Boss Game Studios, is one licensed M2 developer in the U.S. (others are Iguana and Studio 3DO) who concurs with this view. "To commit to it currently would obviously be a huge risk for any developer. Until Matsushita unveil its plans for developer support, M2 development, at least outside of Japan, will be minimal."

Only three developers officially make up the Japanese M2 roll call: tiny third-party developer Warp (previously a loyal 3DO disciple) and, conversely, the undeniable might of twin heavyweights Capcom and Konami. So far, Warp has demonstrated its promising adventure game D2 (a sequel to its prerendered 3DO game, D) and the recent Tokyo AOU coin-op show revealed the first Konami coin-op powered by Matsushita's chipset, a cute take on its *Pop 'n' Twinbee* series using a full polygon environment. Capcom on the other hand has a 3D beat 'em up in development which was recently shown to **Next Gen**. Another third-party developer is Genki, which is rumored to be



D2 (left), Power Crystal (right) and Polistar (above) are some titles gamers have to look forward to

working on a shoot 'em up for the system.

In the U.K., Perception has broken its silence about its plans for the system. **NG 29** exposed its *Power Crystal* title, an RPG, although this is being developed on an incomplete development board with only one PowerPC chip — hardly the kind of situation to inspire confidence, no matter how admirable the design ambitions behind it. Boss's Povey believes his team does have a final kit, though. "Is it final? As far as I am aware it is, however since my units haven't come directly from Matsushita it's hard to say for sure. We had our first development system before Matsushita bought the technology, so we received it from 3DO. We have received updated boards since the sale." Has Matsushita been in touch regarding development for the machine? "No."

This state of affairs obviously bodes poorly for the future of the machine. However, what transpires most from companies that are working with the system, or considering developing pending Matsushita's position, is a unanimous optimism for the 64-bit technology destined to be — or not to be — included in the finished machine. According to Povey, it's more powerful than any other consumer level product he's seen, including PC accelerators. And this view is echoed by those who have experimented with the console's hardware. However, until Matsushita reveals its own work on the system there exists a disparity between what Matsushita itself claims the console is capable of (Model 3 levels of performance) and

the rather less spirited comparisons from third parties of two to three times Nintendo 64's polygon horsepower.

This relative aging of M2 technology could explain the delay. Does the company release the console in six months only to face stiff competition from hardware rivals? Or does it hold on and re-evaluate the technology for an upgrade? One reason for the delay could be the news of the development of M2's big brother, provisionally titled MX. This hardware is the natural successor to M2 and is being developed by the same hardware team that created M2 in 3DO's California offices. "I'm not sure the existence of MX means we will never see M2," adds Povey. "It's normal to start development of your next-generation technology before the current technology is complete."

At the heart of discussions about M2 is the notion that what is really holding Matsushita back from a full-scale assault on the console market is a level of ambition above and beyond the narrow constraints of traditional videogame hardware marketing. Yes, it may have shot itself in the foot with its handling of its 32-bit console but as much of this can be put down to the disappointing performance of the 3DO technology itself as to any negligence on Matsushita's part. Over the coming months it will hopefully become clear if the consumer electronics giant is serious about videogaming or, indeed, if its plans encompass a far wider interactive entertainment agenda. Time will tell.



The Technology Inside M2

1. With two CPUs each offering over 70MIPS there is no question that in terms of raw processing power M2 is substantially ahead of the game. 8MB of unified SDRAM are included with a peak bus bandwidth of 533Mb/sec and an average speed of greater than 400Mb/sec. Simultaneous random access of the frame buffer and z-buffer is possible, too. The BDA is a custom ASIC (application-specific integrated circuit) comprising the system controls for the memory, video and graphic modes of M2. The BDA also includes MPEG decoding and a 16-bit DSP for audio modulation. The CDE is another custom ASIC which handles a low-speed 'bio-bus' and connects the BDA and CPU.

2. The triangle engine is M2's equivalent of the PlayStation's GTE and handles all of the geometry calculations that drive the polygons. On top of this are several different layers of software abstraction that control it and provide easy access for programmers. The setup engine is included in the BDA and processes graphics before output to the screen.

3. The current M2 development environment includes an Apple Macintosh-based M2 card, a PowerPC-based compiler, linker and assembler and an external quad-speed CD drive. There are PowerPC versions of 3DO debugging and sound tools as well as graphics tools allowing the importing of images from PC, Amiga and SGI packages.

M2 Tech Specs

CPU
2xPower PC602 @ 66MHz,
each delivering over 70 MIPS

Video Engine
320x240 – 640x480, full
color

Audio DSP
16bit DSP @ 66MHz
Quad-speed CD-ROM

BDA (custom ASIC)
Memory control, system
control and video/graphic
control. Includes setup
engine, triangle engine,
MPEG decoder, DSP for
audio and different kinds of
DMA control and port
control. Random access of
frame buffer and
z-buffer possible at the same
time.

CDE (Custom ASIC)
Includes a power bus which
is connected to the BDA and
the CPU. The 'bio-bus' is used
as a low-speed bus for
peripheral hardware.

Memory
Unified memory system of
8MB SDRAM, (64bit bus) @
500 Mb/sec,
average access greater than
400MB/per second

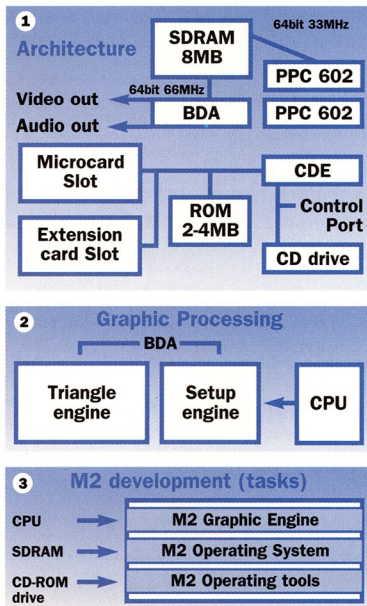
Shading
Flat and Gouraud

Texture mapping
Decal, modulation blending,
tiling
(16K/128K texture buffer
built-in)

Filtering
Linear, bilinear, trilinear,
mipmap, LOD, 3D perspective

Hardware buffer
(16bit)

Alpha Channel
(4 or 7-bit)



What's the Score?

Three years ago, PlayStation, Saturn and Nintendo 64 were all unknown quantities — little more than dots on the horizon of an expectant videogaming landscape. This was also a time when Atari, 3DO, and

Philips learned the rules of the next generation game the hard way, simultaneously ushering in the 32-bit (or, as Atari would have gamers believe, the 64-bit) era while subsequently undermining it with disappointing hardware and poorly executed software.

These machines were the true casualties of the 32-bit era, effectively next-generation guinea pigs which met an untimely demise as their creative


pioneers stumbled unwittingly into the great unknown. But now the next generation has evolved into the current generation and a clarity and maturity has emerged not only in the technology available but also in the visionaries exploiting it. After all, who's designing prerendered interactive movies any longer?

For those coming fresh to the world of videogaming there has never been a better time to reap the rewards. As Sony, Sega, and Nintendo bitterly fight it out alongside the awesome might of the all-consuming PC market, the results are plain to see: quality and choice in both hardware and software.


The future is now. Enjoy it.

ng


PlayStation

	Performance	Games	Prospects	
Sony 32-bit CD-based console Price: \$149	Looked like a dream come true three years ago but has now been well and truly eclipsed by Nintendo 64 and even the PC (once you've remortgaged the house to pay for one). Fast, chunky 3D performance and adequate 2D.	An excess of games, but a few real gems augmented by some quality sleeper titles that will never break into the mainstream. For variety Sony's machine has the best catalog and a budget range means it's now also the cheapest.	Looks unstoppable, and with the world's finest development talent behind it, not to mention the lowest street price, it seems unlikely that anything can catch up. Nintendo has done a good job, though, particularly here in the US.	


Saturn

	Performance	Games	Prospects	
Sega 32-bit CD-based console Price: \$199 (plus three free games)	<i>Virtua Fighter 2</i> and <i>Virtua Cop 2</i> show that the Saturn — when expertly programmed — can hold its own against PlayStation in terms of fast 3D. Sadly the machine's awesome 2D abilities and great sound chip are rarely explored.	A large catalog of 32-bit titles but lacking in scope. Its high points have always centered around the efforts of Sega's coin-op designers and the system's best games therefore tend to be fast-action affairs. Some decent RPGs, though.	Of all the systems examined here, Sega's machine is, sadly, likely to fizzle out of favor first. Many third-party developers have already privately revealed their desertion of the format, but some more triple-A games from Sega are guaranteed.	

N64

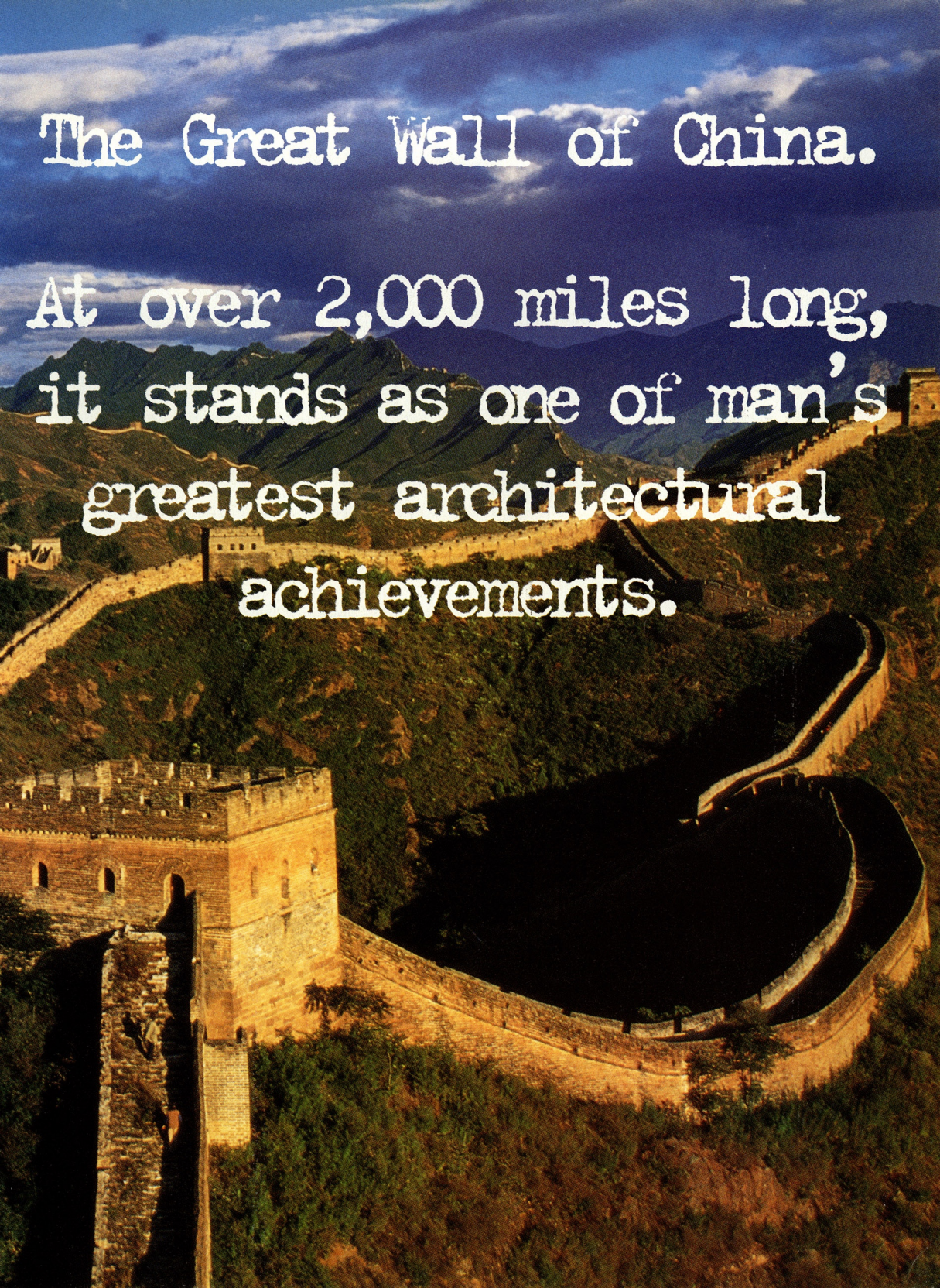
	Performance	Games	Prospects	
Nintendo 64-bit cartridge-based console Price: \$149	Hardly the quantum leap suggested by the pre-launch publicity but unquestionably the most powerful console and one replete with the best suite of 3D effects this side of "Jurassic Park." Weak sound the only drawback.	<i>Super Mario 64</i> amazes even the most cynical and jaded videogamer, while <i>Wave Race</i> , <i>Turok</i> , <i>Blast Corps</i> , and <i>League: Perfect Striker</i> are all good reasons to buy into the 64-bit dream. But are these games enough? You decide.	With Nintendo crafting a range of outstanding titles such as <i>Star Fox</i> and <i>Zelda</i> , a library of classics is assured. However, the question will be how third-party support comes along.	

M2

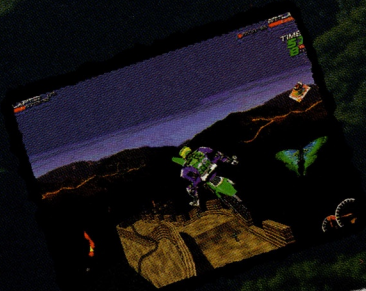
	Performance	Games	Prospects	
Matsushita 64-bit CD-based console Price and release: TBA	Ask Matsushita and it will cite Model 3 levels of power — around one million polygons/sec. Ask a developer with a final dev kit and 2 to 3 times the power of the Nintendo 64 seems more realistic. Still fast. Very fast.	Ten titles are rumored to be in development although whether this includes the three titles Next Generation has seen isn't known. Expect powerful arcade-style titles to spearhead the launch with a more eclectic range following later.	A year ago M2 looked like the home videogaming unit to wipe the floor with more established formats — a machine with untold power and limitless potential. Now the story is slightly less glorious as the system's release looks hazy.	

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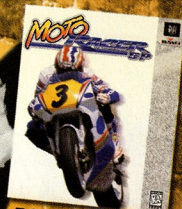


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- The JamZone



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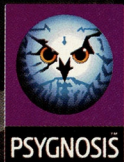
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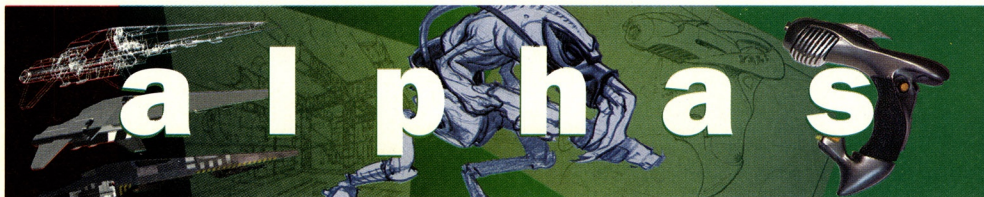
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Game previews to make your heart sing

Face it: graphic adventures have stagnated. Elaborate FMV can't disguise gameplay that involves little more than clicking the mouse and watching what happens. Roberta Williams, who's been designing adventure games longer than almost anyone else, hopes to change that and explains how in *Next Generation's* exclusive interview and preview of her latest *King's Quest* title, *Mask of Eternity*.

72 Mask of Eternity **PC CD-ROM**

Sierra takes a chance, moving graphic adventures into the realm of full 3D. Can Daventry survive the trip?

77 Roberta Williams

Joined by Producer Mark Seibert, the graphic adventure goddess further explains the evolution of the genre

98 Demon Isle **PC CD-ROM**

A team of rogue designers breaks with Microsoft and forges ahead with this multiplayer, 3D RPG

82 Spec Ops **PC, PLAYSTATION**

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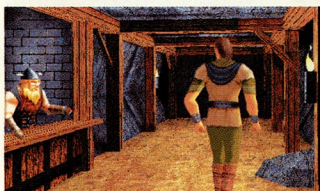


ng alphas

King's Quest: Mask of Eternity

Roberta Williams, one of gaming's most enduring designers, unveils the next step in graphic adventures

Format: **PC CD-ROM**
 Publisher: **Sierra**
 Developer: **Sierra**
 Release Date: **November**
 Origin: **U.S.**



Without Roberta Williams and her husband Ken, graphic adventures as we know them today could very well not exist. The Williams family's contributions to the genre reads like a history: *Mystery House* in 1980 was the first use of graphics in a text adventure; *The Wizard and the*

"We really want to bring out the sense of going on a quest"

Roberta Williams, Designer

Princess in 1982 added hi-res and color; the original *King's Quest* in 1984 added animation; *King's Quest V* in 1989 was the first to use an icon-based interface; and *Mixed Up Mother Goose CD* was the first multimedia game shipped on CD-ROM. The duo's creativity and drive push the technical

The *King's Quest* world of Daventry has never looked or played like this before, and adventurers will need to rethink their approach

envelope in the interest of bringing interactive stories to a legion of appreciative fans, and have produced some of the most compelling and popular computer games of the last decade and a half.

Williams has upped the ante once again for the eighth game in the *King's Quest* series, *Mask of Eternity*, which moves the traditional adventure game into the brave new world of 3D graphics. "What we really wanted to bring out was that sense of going on an adventure, of going on a quest," Williams says, tucked in her modest office at Sierra headquarters in Seattle. "It's not just a word in the title; we want you to feel like you're really doing it."

In the traditional *King's Quest* land



For their latest graphic adventure, Williams and her team of designers are putting an emphasis on action and movement within a 3D world

of Daventry, the most holy item in the world, the Mask of Eternity, has been shattered into five pieces by one of the very beings charged with keeping it safe, the Archons. A tempest rages across Daventry, and a dark cloud

"Everything we had known about designing adventure games didn't fit with the technology"

Roberta Williams, Designer

descends, which turns all the human inhabitants to stone, save one. A young man named Connor is lucky enough to have one of the pieces of the Mask land at his feet, protecting him from the cloud and preventing him from sharing the same fate as the rest of humanity. With elemental creatures and strange monsters coming out of hiding, only he can find the scattered remnants of the Mask and restore the world to balance.

Moving from the graphic adventure's traditional 2D still screens to a fully interactive 3D world was a decision Williams made even before she completed work on *Phantasmagoria*, but the process has not been without its pitfalls. "Everything we had known about designing adventure games did not fit with the technology we were going to use," Williams explains. "It was a struggle, all through last year, to decide how to make a game *King's Quest*-like, but use this technology."

ThreeSpace is the 3D engine that Dynamix, a Sierra subsidiary, contributed to the project. The long process of adapting it to meet the needs of the *Mask* design team began immediately. "The thing is," Williams says, "Dynamix uses ThreeSpace for their flight simulators, and the technology was optimized mostly for looking down from way up high. And we were like, 'Well, you know the camera is going to be on the ground, right?'"

Mark Siebert, *Mask of Eternity*'s producer, continues. "The biggest change was that, when you're 'flying' six feet off the ground, you're obviously looking at pixel world, and we also had to deal with the hit in frame rate you get when you're that close to a textured terrain. You also couldn't animate a 3D object, and there wasn't even a way to get streaming sound like dialogue — planes don't talk!"

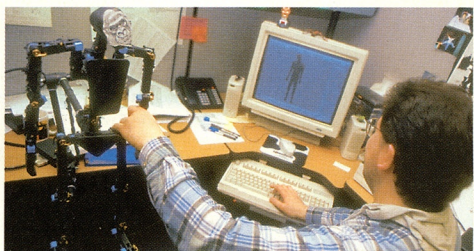
Over a period of nearly a year, the engine was eventually made ready. "The thing is," Siebert says, explaining why so much effort was spent on the technology, "I haven't really seen any



The animation is smooth and believable — if you accept that orcs exist



The *Mask of Eternity* team take a moment to actually relax (above). Artists and programmers at work (right — note the animation controlling "monkey")



ng alphas



The work of the Sierra artists is perhaps best showcased by the wide array of fantastic creatures that populate the game's world. While each is only made up of a few hundred polygons, the combination of highly detailed textures and fluid, single-mesh animation simply make them come alive

"That's what this is about: keeping the world believable."

Roberta Williams, Designer

in and out of places, it was clear we did the right thing."

Buildings and other structures are constructed using a proprietary object editor called ZED (the Terrain EDitor, TED), was developed first — even Siebert doesn't know what the Z stands for), and once placed within the game's engine they become completely interactive and functional. "One of the cool things about this engine," says Adam Szofran, one of *Mask's* programmers, "is that the interiors are part of the world too. If you go inside a building, the outside world is still out there. So if there's stuff going on outside, you can look out the window and not only see what's going on, but do something about it."

Siebert adds, "We were discussing

how monsters work, and we figure if you're being chased, you could run into a house and close the door, but the monster is going to keep trying to get inside and get you. If you move to the window, he'll be right there, and if you had something that could attack through the window, you could hit him."

"That could definitely be fun,"

Williams finishes. "We need to do that kind of stuff because that's what this is about: keeping the world believable."

If this sounds as if *Mask of Eternity* is going to be more action-oriented than previous *King's Quest*



In the tradition of graphic adventures however, *Mask* has a variety of non-hostile characters to interact with and move the story along



The game's engine can model interiors and exteriors equally well

titles, that's because it is. After *Phantasmagoria*, in which players often spent whole minutes staring at the screen, it was clear to Williams and the rest of the *King's Quest* team that a 3D version of Davenport would require a swifter pace. "I never want to leave the player just sitting there with nothing happening," Williams assures. "Creatures can come on the scene at any time, and we're making sure that everywhere you look there's something to do."

She continues, "The one thing the guys here have had to beat it into me," she laughs, "is 'Fine story, but keep it short and sweet!' Players don't want to sit back and watch long sequences. If you can give it to them in a couple of sentences, great."

The lead character, Connor, has a list of motions and possible actions, much like fellow 3D heroes Lara Croft and Mario. Squarely within the adventure game tradition however, players must find objects and solve puzzles by using them. Players find clues by talking to various non-player characters as well, but the icon-based interface so familiar to the series is gone. Instead, the interface is more closely, indeed, self-consciously, patterned after those found in PC RPGs like *Daggerfall* or *Diablo*.

"We didn't want to make it so you go here and solve a puzzle, then go there to solve a puzzle, then go to a puzzle somewhere else," Williams explains. "In a 3D world players want to find things, and we want to exploit that and hide things around. In a traditional adventure game, that



The 3D world works for *King's Quest*, but is this the direction for all adventure series? Williams thinks designers will have to decide, and soon



"Psst! Hey kid, wanna go on an adventure?" The latest *King's Quest* is also one of the largest games in the series

doesn't happen — you find everything in a specific place and it has a specific use in solving some puzzle. So here we've upped the role-playing element, and you can find things like mushrooms to give you health, or gold."

"Players don't want to sit back and watch long sequences"


Roberta Williams, Designer

On the other hand, Siebert is quick to reassure, "I think the nice thing about the game is that the role-playing stuff is really toned down so it doesn't overpower the story. It's not like you find a sword and have to think, 'Well this is a really good sword and it cuts well, but it doesn't pierce well!'" he laughs. "I don't care about that! Does it hit harder? That's all I care about!"

Support for 3D accelerators is planned, but don't expect any attempts to feature the game industry's other current buzzword; multiplayer options are being saved for a secret project the team refuses to discuss. "We could have said we wanted this game to be multiplayer," Williams explains. "But then it would have to come out sometime next year, and that would mean a three-year development cycle. So this is definitely a single-player game, the technology is going to be cool, and we're going to figure out what works and what doesn't for one player. When we're done, and we understand this, then we can go to the next thing, which would obviously be some kind of multiplayer experience." She smiles, "Come back next year."

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An interview with

Roberta Williams and Mark Seibert

One of the best-known names in computer game design, Roberta Williams is still going strong after 16 years in the business. Through *Mystery House* and *Time Zone*, to *King's Quest* and *Phantasmagoria*, she is arguably the single most influential figure in the development of the modern graphic adventure.

Mark Seibert began as a sound designer, then moved on to produce the latest titles from genre stalwarts such as Al Lowe's *Leisure Suit Larry 7*. *Next Generation* visits the Sierra offices and asks, what's next for adventure games?

NG: In terms of gameplay mechanics, graphic adventures haven't progressed much since the invention of the point-and-click interface. What are you doing differently with *Mask of Eternity*?

Roberta Williams: Well, we're not really doing much of that click-on-an-object-and-watch-what-happens stuff. Since it's all in 3D, we're concentrating more on the physicality of the world and of Connor. He has a palette of actions, and we're trying to structure the gameplay and the puzzles around those actions. The fighting is its own thing and is determined by what he's fighting, what his strength is, what weapon he has, and the strategy he uses. As far as puzzles go, well, for instance a water mill in Daventry sits on the edge of a river. Inside, a turning millstone moves around a grappling hook and rope you need, but you can't get to it because the stone is moving around and would crush you. You need to stop the stone from turning. A tree upstream hangs over the edge of the river, so you can chop down the tree. The tree falls, dams up the river, stops the water, and stops the water wheel, so you can go back and get the hook. That puzzle is different from what we've done in other adventure games — you're not clicking on the tree with the ax icon, you're physically chopping it down.

NG: Do any puzzles have multiple solutions?

Roberta: We thought about doing that but decided not to.

Mark Seibert: When we first started the design, we talked about multiple solutions and multiple paths. The more we talked about it and the more we researched it, we learned that especially with adventure games only about 13% of the people who buy them actually finish them. [Laughs.] Then it was like, why do we want to make all these multiple paths? Let's spend out money doing really cool stuff, as opposed to making it replayable, since most people aren't going to replay it anyway.

Roberta: Yeah. *King's Quest V* was probably the most linear game I've done. It didn't have many multiple branches, but it's been by far the most popular one. And I'm not sure exactly why, except that maybe it was very straightforward. We've really come to the conclusion that people do not replay adventure games.

Mark: We didn't want our puzzles to contain stuff from out of left field. That's a problem in many games, and that's what causes people to stop. When I get stuck, I play around for a while and then quit.

Roberta: But the bottom line is that we really are trying to minimize that adventure game idea of point and click, pick up something, sit back, and watch the animation. The animation has been kept very short and to the point — it's very quick. The player controls just about

everything Connor does. In the windmill, the player sees an ax stuck in the ceiling above that Connor can't reach — he can jump, but not high enough. That's not the way. But you'll notice that in the room there's a box Connor can push — he has a push mode like Mario. So you get behind it and push the box under the ax, jump up on the box, and get it. I know that's not an especially challenging example, but it's certainly different for an adventure game, and it shows the kind of action-oriented approach we're taking.

Mark: You get into thinking about the things Connor knows how to do and how you can use those things to solve problems.

Roberta: So he can jump, he can push, he has all these motions. We're also thinking about his weapons — he can carry any weapon around and has different moves for each one — and he can use those for activities other than fighting. He can cut down the tree, but in the underworld he has to cross the black river of Styx — he can swim, but not there, because it's poison and he'll die. On the other side is a wall with a drawbridge gate. The

one nation under Odd

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gate's up, and there's a button on the wall next to the gate, but he can't swim there and he can't jump across it, so how is he going to reach it? Well, eventually in the underworld he can find Thor's hammer that behaves like a boomerang — you throw it and it comes back. Now if Connor throws this weapon — using the mouse you aim, whether it's swinging a sword or shooting a bow or whatever — and it hits that button, the bridge comes down and the hammer comes back. There's another example of his palette of moves and how can we use those as much as possible so the player feels in control. Players know the things he can do and have to figure out how to solve problems. So when he's pushing the box, he can push it anywhere in the room, you don't just click on the box and watch him move it. That was the whole idea, to try and have the player feel totally in control of Connor and what he's doing every minute.

NG: Has the move to 3D precipitated this?

Roberta: I think that with the real-time games that are so popular now, it's obvious that players want more action and want to explore in a 3D space. So when you have the option of doing that, when you have a 3D engine, more possibilities of how to handle a game present themselves. We've got this technology, we can create these worlds in 3D, and put all it together in whatever kind of world we want. But now that we have that, we ask ourselves, "What do we do?"

Everybody's tired of the old adventure game format. They seem to want or like the action-oriented, real-time, role-playing games, but the RPGs get old, since you do the same thing over and over again and rarely have a good story to keep you interested. But people still want more action than traditional adventure games offer. So how can we put that together? How can we marry the two and come up with something new? That's been a real challenge.

Mark: When we started, Roberta had just finished *Phantasmagoria*, and she commented about how that was as far as we could go movie-wise with adventure games. After that we said, "Let's try something completely different and go a completely different way."

Roberta: Totally different! I mean, with *Phantasmagoria* I was able to push the scripting and the story and the characters. With this, the story — at least compared to *Phantasmagoria* — is hardly there. We're really trying to emphasize the action. I've learned over the years, and it became especially clear doing *Phantasmagoria*, that the more you emphasize story, the less interactivity you're going to have. It's just a fact. I think I was able to marry interactivity with story pretty well in *Phantasmagoria*, but even then, there were a lot of scenes in which you sat back and watched a conversation, and then you'd click, "Oh, I want her to do this," and then you'd sit, and watch some more while she did it.

Mark: For ten minutes in some cases.

Roberta: Yeah, and you didn't really get a sense of "I'm doing this." So with this game, we really wanted the player to feel totally in control. We don't want animations longer than a few seconds. Actions are based around Connor's moves, as opposed to pointing, clicking, and watching.

Mark: But I think the story is still really strong. I think you've got a really good story for *Mask*, it's just being told in a different way. You don't just sit and watch stuff, you experience it as you go, and get little bits and pieces as you go through the game.

Roberta: The other thing is the story fits and makes sense for the world you're creating and the kind of game you're creating. And so we decided

that this game was going to have action and combat — it wasn't going to be emphasized in a *Quake* or *Duke Nukem* kind of way, but it's definitely going to be there. Then we had to decide how much of the game would be action/combat. I guess we're still arguing about what percentage it should be. [She turns to Mark] You said 80%, but I think more like 70% — maybe 60%! [Laughs.]

Mark: Well, I've been upping the percentage because other interesting elements present themselves. You can fight monsters; you can improve your character. So we wonder how big the world is and what other things you will have to do. So I'm saying 80%.

Roberta: Mark is really helping me with the design, because he's really into the role-playing games. He really likes them and understands them. I've

played them, but I have to admit I don't have any particular affinity for them. I love adventure games. I just want to sit down with something like *Myst* and solve puzzles — I love it! Mark, on the other hand, doesn't play adventure games, although he produces a lot of them! [Laughs.]



The story is really strong. You don't sit and watch stuff, you experience it as you go

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Winston is such a girl.
Always opting for diplomacy when he
could just bombard his enemy from space
with orbiting dreadnoughts.

Yeah.
A big fat girl.

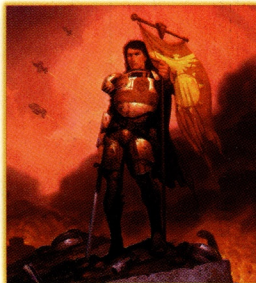


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NG: You produce but you don't like them?

Mark: No, no. I like them and play a lot of them, but I've never finished one! I always get halfway through and get stuck someplace, and then I have to download the walk-through off the Internet and read the solution, and it's always like, "Well that's a stupid puzzle!" I get so frustrated, I throw it down and never pick it back up. I mean, I liked *Phantasmagoria*.

NG: But at the same time, certainly there has to be some level of challenge, or you might as well watch a videotape.

Roberta: Well, it is a fine line, and the hard part is finding that line.

Mark: True. It's frustrating to have to apologize to people for certain puzzles.

In *Larry* 7, you have to push on a certain door — in spite of all these guns coming out of the wall implying you shouldn't even touch it — and all of us *knew* that was a bad puzzle, and that we shouldn't be putting it in,

but it made for a big joke and so we left it. Sure enough, people have written me about it all the time and say, "Hey! That was a stupid puzzle!"

Roberta: The two of us make a good mix. He'll sit down and go, "Well, in role-playing, this is what I really like," and so on. And I can say, as someone from an adventure game background, "OK, explain this to me." And we'll talk about it, simplify it, and work it out.

NG: Simplify it?

Roberta: Well, sometimes role-playing games can be very complex, and one of the things I like to do is take a complex idea and make it simpler. I'm sure you've played some adventure games that were complex or illogical. I like to take something that could be a complex idea and bring out its strong points, but break it down into something that's more accessible to people. And so Mark will explain how, for example, the whole character creation system works in a lot of role-playing games, and I'll say how that sounds way too complicated and ask how we can make this more accessible.

On the other hand, I'll want to put in all these adventure game elements, and he'll stop me when I start to put in something that's just more point and click. So it's really been a good back and forth kind of thing, and I think we're doing a pretty good job of melding those two concepts.

Mark: Try to take the fun things about both, but lose the baggage of both.

NG: So where do you see adventure games going? The list of games you've created very nearly represents the evolution of the genre.

Roberta: You know, this game is almost like going backwards for me, in a way. When I was thinking about it, *King's Quest I* is not as dissimilar from this game as you might think. You had a fantastical world, you had limited actions, the story was simple and straightforward, you even had to fight in a couple of places — it happened in an adventure game way, but you fought. It wasn't very deep really.

As I went forward, with each successive game, the story started coming out more, the characters had to be more developed, conversations became more important, and it really culminated with *Phantasmagoria*, where we were doing video and camera work. I think the story began to overpower the game. This game is almost like going back to *King's Quest I*. You're on a quest, and everything is very straightforward in that sense. There's a story around that — it's not devoid of story — but everything happens in an interactive, physical way. But as for where they're going next — well, I can't speak for other developers, but I would probably bet that adventure games will have to be more action oriented. When you're in a 3D world, by its very nature it's more physical.

Mark: We put a lot of action into this, and I don't know if this kind of action is necessarily the wave of the future for adventure games, but I do

think the idea of interactive action is important.

Roberta: Yet there's a fine line, because as soon as you say there's going to be more action, you get into a prickly area. Should the game have an arcade feel like *Mario*? Do we want to require timed jumps, hand-eye coordination, and lots of complicated button moves? We talked about that, and we decided that in this case, we did not want to be so action oriented that the player had learned all these special moves.

Mark: Our solution is a solution for *King's Quest* itself. I was talking to Al Lowe about the next *Larry* game, and he looked at what we were

doing and said, "So we're going to have Larry run around and hit people?" For that game, it wouldn't work. He'll have to figure out what action means for Larry.

Roberta: That's very true. I was able to put together a kind of fighting thing for

King's Quest, and it works very well because we have knights and swords and dragons anyway. But something like *Larry*, or something like *Gabriel Knight*, what are they going to do? They're going to have to figure that out.

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The idea was to have the player feel totally in control of Connor and what he's doing



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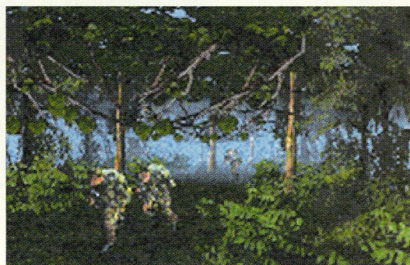


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ng alphas

SpecOps

Zombie's latest first-person shooter is no *Doom*. This special forces "sim" brings home real covert soldiering in exterior environments



Covert activities take the player into a North Korean missile base (left and top) and a South American jungle (above)

Players use real army issue weapons, such as fully automatic M-16s, against real enemies, such as Afghanistan terrorists

Nothing is out of the ordinary in the industry of videogames. Which is why Next Generation isn't surprised to be

touring a Seattle development house started by two former military/virtual reality consultants turned game developers. Zombie co-founders Mark Long and Joanna Alexander both worked for the military before they met at the Sarnoff Research Center (the birthplace of color television among other modern ingenuities), where they worked on Hasbro's \$51 million Virtual Reality game system that never came to fruition. Having been wooed by the pleasures of game development, Long and Alexander left Sarnoff to found Zombie. The company has since developed several forgettable titles, as well as the memorable *ZPC* for the Mac. The tour of Seattle's hip game design house begins with the first of three titles Zombie is developing for BMG, entitled *SpecOps* (short for Special Operations).

"I wanted to do something super risky," Zombie's co-founder Mark Long says about pitching BMG its *SpecOps*

Format:	PC, PS-X
Publisher:	BMG
Developer:	Zombie
Release Date:	Fall '97
Origin:	U.S.

title. "I wanted massive environments and an unparalleled level of fidelity."

SpecOps is a first-person shooter that is more a ground forces sim than arcade-style shooter. Unlike *Doom*, where players become generic space marines with access to otherworldly weapons such as plasma guns, *SpecOps* puts the player in real world environments. Players use real army issue weapons, such as fully automatic M-16s, against real enemies, such as Afghanistan terrorists. The game's five missions are realistic and include hostage rescues and drug raids. What players won't find in *SpecOps*, and this is disconcerting to the wounded, are potions of healing around every other corner.

"I think ground combat is always associated with either a strategy game or an arcade game," says BMG executive producer Mike Suarez. "It's never received the same serious



As a consultant, former Ranger Ron Haskins works on all aspects of production



To better understand the Ranger dynamic, game designers attended and photographed a "live fire" drill (top). Real soldiers (above, left and right) were photographed over blue-screen for texture-mapping

treatment a vehicle simulation gets. It's just another applied force in a military scenario, and we wanted to simulate it."

The idea of taking the role of a special forces soldier seems so obvious, it's surprising that it hasn't been done before and easy to understand why *Zombie* has specifically chosen the Army Rangers as the subject of *SpecOps*. According to Long, the Rangers are known for their aggressive combat techniques and have traditionally had a high casualty rate because of the dangerous nature of their missions, which is perfect for a first-person shooter. During World War II, the Rangers had an 80% casualty rate. They are typically sent into territory behind enemy lines and often provide the muscle in FBI operations.

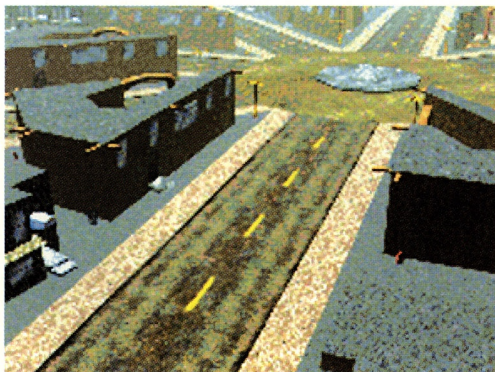
The game of course, will not simulate the mundane aspects of special forces operations, so don't expect to be stuck in a tree for two hours holding a sniper's position.

"We don't want to create experiences that are so realistic that they're boring," says Suarez. "You are in a sniper role in some situations," he continues, "but we give you unexpected visitors and unexpected problems. Your perch may come under fire, or you may face more enemy activity than you are prepared to handle."

Even this early in development, *Zombie* seems to have a formula for success. The team is committed to meticulous research and use of military resources and it possesses the technical prowess to create a cutting-edge game. A former special forces instructor has even consulted on the project and has been the subject of several motion-capture sessions. Also, *Zombie* has



Expect detailed, contoured terrain and some brilliant lighting in the PC version. Notice the way the red glow reflects off the icy ground above



This aerial shot gives players an idea of how Kabul, Afghanistan looks when they are inserted via helicopter for a hostage rescue mission

attended "live fire" drills at nearby Fort Lewis, gathering information on real special forces training operations in which live ammunition is used.

There are only five missions, but Long believes that each distinct environment will be massive. "It will take you 45 minutes to get from one side of the map to the other," he says. Everything in the world is photo-textured for added realism — this includes the terrain, buildings, vehicles, and even enemy faces. Long notes this is a painstaking process because any hand-drawn filler art clashes tremendously and can't be used.

Having worked in military simulations, Long and Alexander have extensive AI backgrounds. Alexander breaks down the AI in a comparison to two magnets, which either repel or attract objects to each other. "Strange attractor," as Alexander calls it, implements chaos algorithms that underlie on-screen character motions. Subsequently, this should add greater replay value as CPU characters should never react the same way when confronted with the same situation.

Zombie really looks to advance sound design as well. In place of music, the developers added detailed ambient sounds to create a much more atmospheric environment. "People do not spend enough time on sound," Long says. "We're going for perfect aural fidelity." Suarez completely agrees and mentions that every hard-core gamer he's ever met hates game music. "Why waste money on a CD-quality soundtrack? We're focusing on what's more critical to the

Rangers are known for their aggressive combat techniques, and have traditionally had a high casualty rate

ng alphas



Zombie has compiled 500 sounds, including 100 sounds from a special million-dollar military simulation system



With extensive research, each level features authentic enemy uniforms

gameplay and giving it a production value that more than makes up for the absence of music."

To this end, Zombie has compiled 500 distinct sounds for the game, including 100 exclusive sound files from a special million-dollar military simulation system. Because the game's setting varies from exterior to interior environments, the team has gone to great lengths to record distinctive interior and exterior gunfire sounds and capture sounds for each of the different types of weapons in different places. If a player fires an M-16, the sound sample will differ depending upon where it's fired. And if players are up against Afghani terrorists with AK-47 assault rifles, they will hear actual AK-47 sound samples.

According to Suarez, players will hear the sounds of the crunching leaves they tread upon, crickets and birds chirping, birdcalls from teammates, plus little low-level scratch radio communications via the player's wire and real digitized sounds from the field. "I don't look at that as economizing," Suarez says. "In fact, I like to think we're pushing the sound effects envelope."

Zombie's focus is on the consummate one-player gaming experience, but it is not leaving out multiplayer options. Suarez says it is still under construction, but they expect to have between four and eight players over a LAN. It is also developing Internet play with MAK Technologies, which developed multiplayer Internet links for military sims. Suarez isn't quite sure yet how *SpecOps* multiplayer games will be shaped, but he believes MAK will be able to deliver Internet play without a dedicated server. "We might end up with a capture-the-flag thing," he says. "In a worst case scenario, we



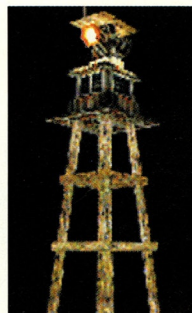
Numerous vehicles based on real world models can be seen throughout the game — everything from massive missile trucks to broadcast news vans

just give them the environment and let them all kill themselves."

Technically, Zombie believes the minimum system required to run *SpecOps* will be a P90 with 16MB. A separate version of the game, specifically designed to support 3D accelerator cards, will also ship. The PlayStation version will stream data, so load times should be nonexistent. This version should run at 30 frames per second, utilizing true 3D-clipping, a technique to eliminate all the tearing in polygonal seams that has plagued even such fine games as *Tomb Raider*.

Long and Suarez share a vision of branding *SpecOps*, in which subsequent releases will enable players to become special forces divisions of different armies. Long says he'd like to simulate SASS, the British special forces division. Suarez likes the appeal of a global marketplace for their games, and notes the general loyalty of sim fans. "There are sims of just about every vehicle known to man," Suarez says. "And that audience is very loyal; they buy six to twelve products in every year. It's a real evergreen business if you can launch a successful franchise in the simulations category."

SpecOps can't possibly be all things to all gamers, but it looks as though it may do a lot to bridge the gap between sims and arcade games, while advancing the genre of first-person action games. Players might not consider this advance as they gleefully unload a clip into a South American drug czar with a fully-automatic, army issue, assault rifle but as long as they're having fun it doesn't really matter.



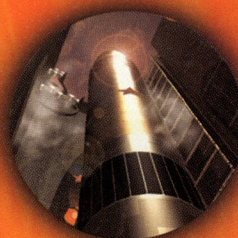
Photographed textures have been used to create every object in the game

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ONE



The nearly unknown developer of such classic fare as EA's *Strike* series has a new title that may very well set the standard for 3D action



ONE's level design and technology are geared towards noble goals: keep players moving forward, give them lots to shoot at, and always throw in something new

The age of 3D gaming continues to roll on, and design hurdles that seemed insurmountable a scant year ago have

become the grist for just another set of programming libraries. The industry is poised at that moment where software development begins to move beyond the nuts and bolts of pushing polygons and shifts its focus to simply building great gameplay. *ONE* from Visual Concepts is a perfect example: yes, it's in real-time 3D, and yes, it has texture maps and light sourcing. But the team itself is more excited about finding ways to throw as much fast, relentless action at players as they can handle.

"The whole idea behind this game was to take the kind of hard-hitting fast pace you used to see in side-scrolling platform games and translate those values into a 3D game," says Greg Thomas, president of Visual Concepts. "The more action, the better."

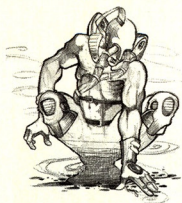
In *ONE*, players take control of John Kain, who quite literally wakes up one day to find his right arm replaced by a really big gun. He also finds he has total amnesia and doesn't know how he got that way. Suddenly beset upon from all sides by enemies, he must battle his way across the hostile landscape in a desperate attempt to stay alive and discover the reasons for

Format: **PlayStation**
Publisher: **ASC Games**
Developer: **Visual Concepts**
Release Date: **November**
Origin: **U.S.**

his new arm and lost memory.

The game's biggest selling point, however, is an unrelenting pace, which is woven part and parcel into the game's structure. "I think one of the big things that makes us different is the way that we're handling power-ups, because we don't have them," explains Scott Patterson, the executive vice president. "As you learn more about the character, you're going to realize this guy basically only has one emotion: rage. So he gets stronger, faster, and more accurate as he goes through and kills a whole swarm of enemies. The more enemies he kills quickly, the angrier and more powerful Kain becomes."

Kain experiences several levels of rage and gains new powers as his rage grows, while failure to continue moving and killing drains his power. "You can't just stand waiting for things to attack you because you'll lose momentum," Tim Walter, *ONE's* technical director adds. "You always have to be running, moving forward, and shooting things because if you wait around you won't have the power to

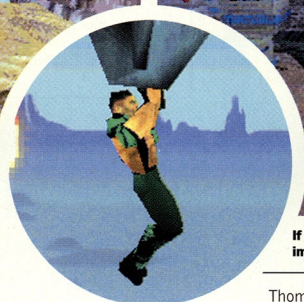


Conceptual art highlights some of the game's plethora of enemies



The monorail boss shows off Visual Concepts's interesting designs

ng alphas



If John Kain already looks like a man of action, imagine these same scenes with enemies everywhere

handle what comes next. This lends a lot higher sense of urgency," he finishes, with understatement.

To maintain this pace, the design team has made use of a technique which has been used before on PlayStation, but never with quite such dramatic results. "The game passively loads the data for the next part of the world as you play," explains Walter. "The term is asynchronous loading, and it could play continually through to the end. Technically, one world can be as big as the CD. Since we load it that way and we don't have to store anything, we can use all the texture space and all the memory just for what you see on screen. It means we can have as many textures as we want and change them as often as we want."

In the game, John Kain moves from an urban metropolis, across craggy mountains, through a monorail tunnel, over deserts, and even under water. Not only is each section completely unique, but each changes subtly as the player moves forward. Continue points are liberally placed in each section as well. "We're not forcing hours of gameplay by intentionally setting up a player to die and then get sent back to the beginning or making them play the same section over and over again,"

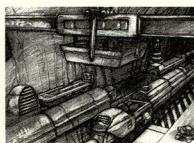
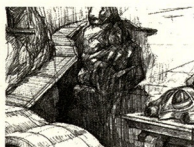
Thomas says proudly. "It's a very large world, and there's no reason for that kind of frustration."

Even cinematic breaks — yes, there are occasional breaks — are rendered in real time using exactly the same models and scenery as in the rest of the game. This effect never distracts players or disrupts the immersiveness of the experience by pulling players out of the game's environment.

"I think at the end of the day, this is definitely going to be one of those titles that seriously showcases PlayStation's hardware," Thomas concludes. "By the time we get a level complete there will be parts where there's between eight and ten enemies on screen, in addition to your character, all in real-time 3D." And all of them, no doubt, will be coming in a human wave to kill you.

"This is definitely going to be one of those titles that showcases PlayStation hardware"

Greg Thomas, President



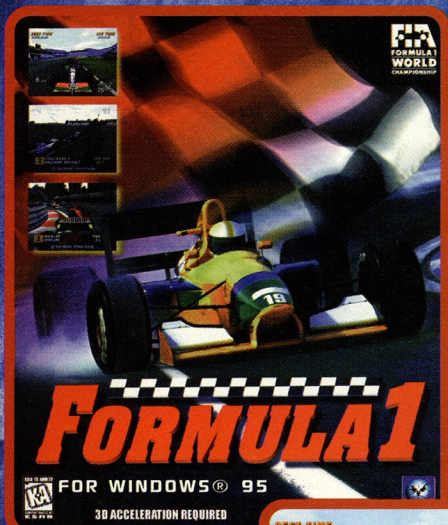
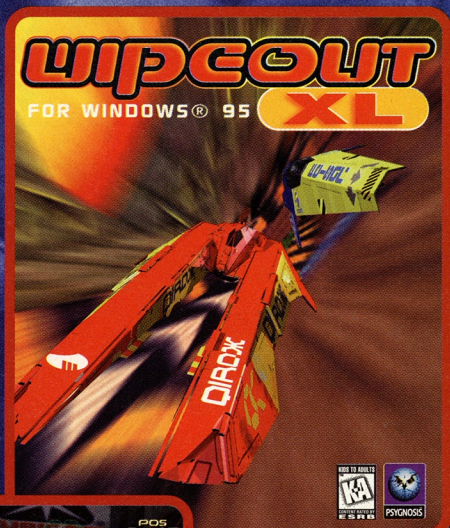
ONE's techno-gothic design is no accident, as seen in these early sketches



From deep underground to a rocky mountaintop, ONE's terrain varies not only from stage to stage, but even one step at a time



ACCELERATE



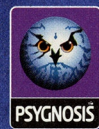
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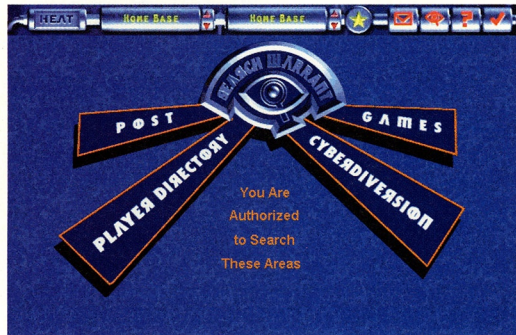
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Heat



Format: **PC, Online**
 Publisher: **SegaSoft**
 Developer: **Multiple**
 Release Date: **June**
 Origin: **U.S.**

"SegaSoft is now 100% Internet and PC focused"

Gary Griffiths, President

Soon, you'll hear people refer to the online gaming service providers as "the big four." As early as March, SegaSoft

began moving Heat into the eye of the gaming community, and is preparing to directly take on Mplayer, TEN, and Engage in what may be the height of the online gaming gold rush.

Forget about SegaSoft's original multi-platform plans. For whatever reason, the company never procured a PlayStation license, and its Saturn titles weren't exactly port-worthy. "SegaSoft is now 100% Internet and PC focused," says SegaSoft president and COO Gary Griffiths. "We're betting a lot on the Net."

The future of the 20% employee-owned company is riding on Heat. "It comes down to three points: brand recognition, technology, and content," says Griffiths. He feels Heat can oust both TEN and Mplayer by matching each company's strength — TEN's strength is content, Mplayer's strength is technology — and beating them where they are weaker. Griffiths believes TEN is weak in technology, Mplayer is content deficient. And of course, it's

SegaSoft enters the online gaming race, looking to burn the competition



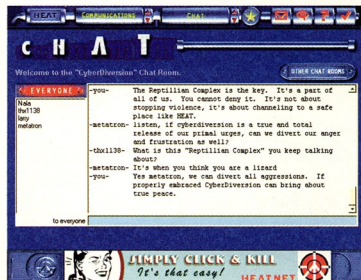
Heat offers a variety of communications (above) including a player pager. A search engine (left) even looks for genre-specific games

bringing veteran Sega marketing savvy to the online gaming community, a community that still hasn't managed to stir up much hype in the mass market.

With three revenue

streams, Heat's business model is a unique departure from both TEN's and Mplayer's. Two revenue sources are, of course, advertising and an annual membership fee. Two levels of membership will exist; the free one excludes the player from some of Heat's finer services. Membership costs have yet to be secured, but Griffiths thinks it will be under the average price of a game.

The third revenue source is innovative — no, it's downright crafty. Instead of dumping lots of venture capital into securing product exclusives (the TEN model), Griffiths explains that Heat will also serve as an online game



Of course, chat rooms are available for gaming discussions and badmouthing opposing players

ng alphas

Alien Race

Alien Race is the sci-fi equivalent to *Diablo*, with a three-quarters overhead perspective and a similar action/strategy vibe. However, up to 30 people can play at once. Players are broken up into three teams of ten, each team representing a specific alien race.

The objective? Annihilate the other races, and capture their home reactor core. Of course, each race has different strengths and weaknesses and features multiple weapons

and power-ups. With teams of ten, collective strategy will be key to winning. Specific chat channels will be available to each team, and the game will track the success of individual characters.

Does this sound like sci-fi gang warfare to you? We think so, and we hope the execution is as cool as the concept. We'll find out this month, when it becomes widely available.



Heat Warz

According to associate producer Phil Gelbar, the eight-player *Heat Warz* is "a C&C style game, but it's more arcade-y. Your base is already established, so you can focus on the fighting."

Heat Warz's catch? Players can switch between the point-and-click command to actual arcade-style control over individual characters and can modify an army's technology via a research tree. "It's a technology tree like

the one in *Civilization* with enhanced rocket launchers, and different skill sets, like a climbing technology that lets pieces climb cliffs on the maps, instead of going around," says Gelbar. The tree will boast a whopping 100 types of technology, which will be uploaded to Heat over time. The game was on test as early as March. A second phase of the game will be available late summer, and the designers will be online looking for feedback for this newer version.



Net Fighter

The first one-on-one fighting game specifically designed for the Internet is already on test.

Currently boasting a roster of four fighters, players can combo, counter, maim, and yes, kill opponents. "No games out there have been designed for the Internet," says producer Eric Walhberg. "We've designed and coded this keeping in mind packet transfer and possible packet loss."

First and foremost, Walhberg insists, is the game's

ability to play well. On top of that, players will be able to create their own fighters via Heat, as well as learn new moves, increase characteristics, and watch other fights. The game will support standard PC pads, but players can also use the keyboard. The final retail PC version will feature eight characters and should be available in December. While *Net Fighter* is 2D, SegaSoft is already planning a 3D follow-up to the game.



Ragged Earth

Described by associate producer Steve Patterson as "Worms 3D," *Ragged Earth* should surely be the first strategy game to feature voxelized characters and polygonal terrain. Developed by Animatek, this four-player strategy game will ensure quick gameplay with timed turns, and over 20 weapons and 12 special defenses. Some weapons will need to be unearthed, hidden in bunkers buried below the surface. The futuristic

warriors (which feature a blend of motion capture and hand drawn animations), are only matched by the superb terrain maps.

Each terrain has been designed by Roger Dean, the artist who's illustrated the band Asia's album covers over several years, and looks to give the environments a truly unique look. *Ragged Earth* ships stand-alone as well as Heat-enabled this December.



Scud: The Disposable Assassin

While based on the comic book character, this top-down action game is completely different from the Saturn version (whew!). Based inside the Scud factory where prototype Scud's are being developed, up to 16 players must simultaneously hunt down each other while protecting their own target. Remember, Scuds are disposable assassins which self-destruct after their targets are destroyed. The Catch-22 of this situation lends a

strategy element to what otherwise appears to be a simplistic top-down shooter.

Producer Bill Person compares it to *Bombberman* and it also has some *Gauntlet*-style action. Players can take the role of targets and create mayhem with plenty of power-ups, like motion-sensitive bombs and a multiple holograph cloaking device. Due to be a Heat exclusive this summer, this is what the Saturn version should have been.



Zombie Island

Developed by Norway-based End Games, *Zombie Island* (working title) aims to combine the goth and cinematic horror of *Resident Evil* with the tactical gameplay of *Myth*. Players must keep their party of humans alive on an island resort overrun by the living dead.

ZI features two multiplayer modes. In a head-to-head mode, it's humans vs. player-two controlled zombies. The

second, an eight-player mode, puts each person in individual control of a human, where each player has the choice of cooperatively battling zombies or deathmating the other humans. The game looks to feature an easy to use interface, and yes, it's going to be gory. The game goes up on Heat (with Heat-enabled power-ups) and will be released as a separate stand-alone Windows 95 product this Christmas.





Players can quickly navigate to any area via the Launchpad (above). Note the red-and-white Heat logo, a combination peace sign and gunsight

store. In purchasing large volumes of games to sell online, SegaSoft looks to build third-party relationships with quality developers, who will in turn "Heat-enable" their products. SegaSoft can then recoup the cost of securing the game by offering it to their patrons, for perhaps, as Griffiths suggests, a cost much lower than retail. Through advertising partners like Virgin music, CDs and other merchandise will also be available for sale.

On the technology side, Heat offers it's own RIPX technology and has licensed Mpath's architecture. RIPX is basically a modified version of Kahn, and as part of the Mpath foundation, anyone who's played on Mplayer knows what Heat is capable of. (For more speculation on Heat and latency issues, see this month's "Joyriding" column on page 26.) Initially, the service is set to host 250,000 users, and is scaleable in design to accommodate more as the need arises.

With many Sega of America veterans on board, you can bet the service will be nicely packaged. Subscribing members will be able to earn a pseudo online currency, called "degrees." Degrees are earned via interactive advertising, or won in tournaments, and can be used to get discounts on merchandise. But the most unique aspect of the degree system is that players can use degrees to buy power-ups or enhancements for Heat-enabled games. Want a new gun for a first-person deathmatch? Buy it with your earned degrees. Degrees are probably the most dynamic aspect of

subscribing, but subscribers also get customizable homepages listing their personal gameplay stats. A pager function shows players whether their friends are logged on, and the "scheduler" enables a group of players to schedule a game a week in advance, with a complete breakdown of rules involved. A news page called "The Rant" and a chat service are offered.

So what about the games? Besides supporting numerous hit titles like *Quake*, *Blood*, and *MechWarrior*, Heat will offer a variety of original titles; most are being developed out of house for SegaSoft. Four original titles will be up and running on Heat for its launch sometime around E3: *Net Fighter*, *Scud*, *Heat Warz*, and *Alien Race* will feature Heat-enabled enhancements. For example, if you play *Net Fighter* on Heat, you can purchase new moves and combos with degrees. The game will continually evolve over the Net, and while it brings up plenty of balance issues, it's interesting to think of a fighting game as something bordering on a persistent world. Several other Heat-enabled titles, *Zombie Island*, *Ragged Earth*, and *Oblivion*, will be available in early '98.

The Internet has opened up online gaming to multiple players, but it hasn't reached a point where a community can actually barter inside an evolving game. Much of Heat's success will ride on how willing player's are to buy games from the store, and how willing folks like *Id* and *3D Realms* are to Heat-enable their games. The ideas are big, and the machine is in place to implement them. By the time this story prints, thousands of beta testers will be putting the system through its paces. SegaSoft hopes it works.

Subscribing members will be able to earn a pseudo online currency, called "degrees"



Every page bears an ad banner across the bottom, and a navigation bar atop



Subscribing members can build their own Heat homepage. Almost like a virtual baseball card, it features multiplayer stats and some personal info

ng alphas

ReBoot

Format: **PlayStation**Publisher: **Electronic Arts**Developer: **EA Canada**Release Date: **September '97**Origin: **Canada**

"We wanted to create a PlayStation game that was technologically comparable to a Nintendo 64 title"

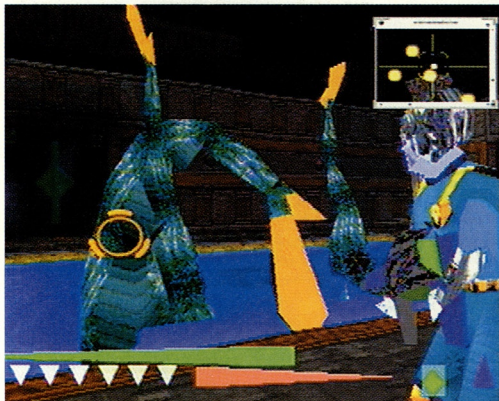
Jules Burt, Producer

EA's Vancouver, Canada studio isn't too far from MainFrame Studios, where the television series "ReBoot" is produced. Nearly two years ago, representatives from both studios agreed to make a game based on the show. And two years ago (while 16-bit was still limping along), they decided it wasn't going to be some side-scroller platformer with a license — and since then, it's become a hell of a lot more.

"We wanted to create a PlayStation game that was technologically comparable to a Nintendo 64 title," says producer Jules Burt. "We wanted to replicate that 3D gameplay that people claim is only on Nintendo. That was very key to us, and to a large degree we're getting there."

Burt is right; they've nearly done it. *ReBoot* boasts fully 3D levels, polygonal enemies, and bright texture-rich environments as colorful as those in *Crash Bandicoot*. From a third-person view, players take on the role of the show's main character, Bob, who guards the city of Mainframe (a very "Tron"-like world) from henchmen-like

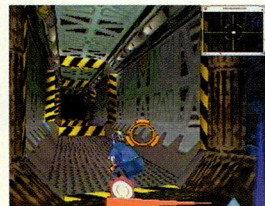
TV's first 100% computer-generated series becomes EA's new Canadian division's first 100% 3D PlayStation action game



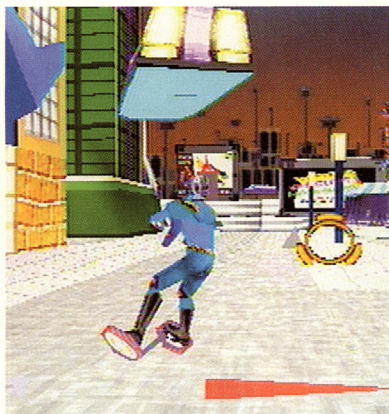
Bob is created from roughly 600 triangles, while enemies are around 150 to 200 polygons. The interface seen in all screenshots is placeholder

Binomes, Tears, and the evil boss Megabyte. In a combination of skimming and shooting, players navigate Bob's world via a zip-board, which is like the hoverboard from the film *Back to the Future III*.

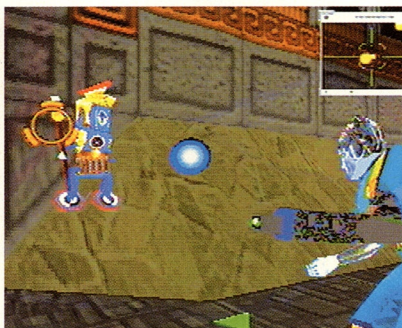
The zip-board brings a new and unique experience to gaming. Combining the arcade action of the classic skateboarding game *720°* with startling hover-physics like those of *WipeOut XL*, *ReBoot* (even at this early stage) raises the addictive boarding control element found in the likes of *CoolBoarders* to a new height. While the zip-board is the sole means of movement in the game, its speed lends variety to the gameplay. Certain sections require players to race enemies and they'll often will need to



Bob uses the freeze gun (left). The gameplay will seamlessly blend to 22 minutes of cut scenes, produced by the TV show's MainFrame studios



At press time, Bob had 53 separate hand-drawn animations, which are easily blended with key frame interpolation for arcade-quick control that doesn't sacrifice gameplay or visual continuity



But this wasn't built overnight. EA spent a year in design meetings, testing game concepts and prototype technologies. The sports-oriented Canadian studio was very unfamiliar with this lengthy routine, as its sports production cycle is usually between six to nine months. "To have a design team focus on something for a year before they even started development was sort of a scary thing for the studio," Burt says. "But it was a learning process they had to go through."

"To have the design team focus on something for a year before they even started development, was sort of a scary thing for the studio"

Jules Burt, Producer

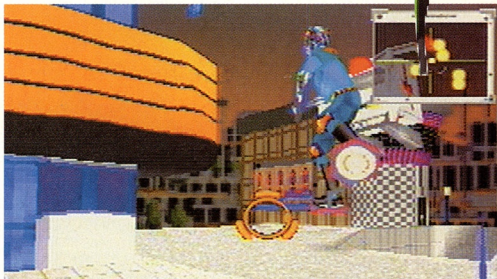
master stunt moves to navigate hazardous areas and even high winds (which have a startlingly realistic effect on the board) while continuously blasting away antagonists. EA has already trademarked *ReBoot's* physics model, called Real Physics, and the team plans to implement compatibility with Sony's new analog control pad, scheduled to be available later this year.

ReBoot evolves through seven levels, which break down into 21 separate areas, according to designer Adrian Crook. He claims that each individual area is as large as any level in a standard PlayStation game, each with its own look. The opening level drops the player outside of Dot's diner, and other staple landmarks of the TV show appear throughout. Environments include a port area, sewers, the outside of Bob's apartment, and even a dangerous Greco-Roman maze complete with chariot-riding Binomes and tumbling columns. Throughout the game, players will need to obtain keys and power-ups.

Accompanying the cutting-edge visuals is the high watermark sound design. Unlike the show's orchestral soundtrack, an interactive techno soundtrack backs the gameplay. The music composes itself on the fly, increasing tempo as players build speed, encounter multiple enemies, or take damage. Also, over 600 lines have been recorded by the cast specifically for the game.

The Canadian studio is planning large growth in the action category, which may be a countermeasure to the action gaming competition that invaded the 32-bit sports market. While its reason isn't important, EA Canada has undeniably entered the 3D action category and is investigating technologies for the long haul.

"In *ReBoot's* early days, our terrain was very flat," Burt reminisces. "We now have full 3D levels. Sometimes the technology led us to redesign our ideas. But the technology we now have we will use on the next *Reboot* and potentially other titles."



The environments will feature plenty of moving vehicles and other live elements that double as obstacles which, of course, you can shoot



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Demon Isle



A gang of rogue ex-Microsoft employees is slaving away at the next word in first-person RPGs — with an online twist

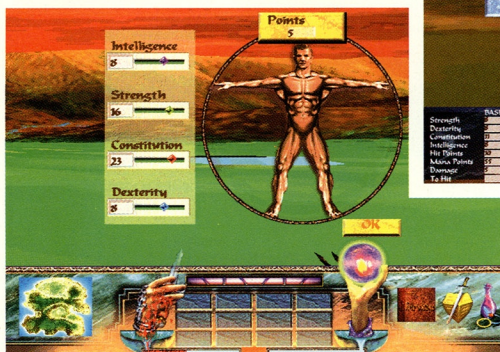
Format: **PC CD-ROM**

Publisher: **Sierra**

Developer: **Cat Daddy**

Release Date: **November '97**

Origin: **U.S.**



Demon Isle's interface is the usual pop-up menu model, but players can see through each screen and keep an eye on the action

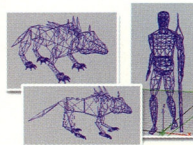
Demon Isle more closely resembles a decentralized version of Meridian 59 than a first-person Diablo

Hidden away in a nondescript subdivision of Seattle is Cat Daddy Games, a new developer founded by three ex-Microsoft employees — Ryan Haveson, Harley Howe, and Patrick Wilkinson. These three, plus two artists, make up the entire staff. "Working for three or four years each at Microsoft's game division, we all got to play a lot of different games," Howe explains. "And we felt, given the titles we were working on or had to work on, that we could do better. So last March, we felt strong enough about it to leave, and that's how Cat Daddy happened."

Its first title, due out this fall, is a first-person action/RPG that

consciously builds on the genre's recent developments. The game is set in the world of Magincia, which has been invaded by armies of evil creatures swarming off Demon Isle. The military, unable to destroy the island's seven Temples to Evil, recruits mercenaries and adventurers to complete the job, which is where the players come in.

And we mean "players." *Demon Isle* has been built from the ground up as a multiplayer game. It runs either on a LAN or over the Internet, using the same client-server model as Blizzard's *Diablo* on battle.net: players connect through their own provider, the game contacts Cat Daddy, and a session is launched with one player's machine as the server. However, unlike *Diablo*, which limits games to four players, *Demon Isle* handles literally dozens of players, depending on the capabilities of the server's hardware. In fact, the game



The creatures are quite detailed, despite their modest polygon count



The game has a few non-hostile NPCs (above), but players can expect plenty of anger from local fauna

"Even the single-player version is a multiplayer game that just happens to have one player"

Ryan Haveson, Cat Daddy Games

resembles a decentralized version of 3D0's online world, *Meridian 59*. "Even the single-player version is a client-server model via Windows; it's a multiplayer game that just happens to have one player," Haveson explains.

To combat latency

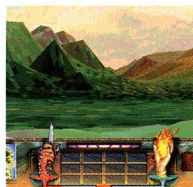
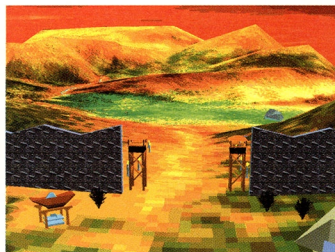
problems, the team uses a different synchronization model than most online games. "We call it a lazy synchronization model," Haveson smiles.

Lazy synchronization lets each player's machine run the world independently, fixing the world state only when updates become available from the server. "It's a transaction-based model that doesn't require a lot of data to fly back and forth," Haveson explains. "If two people are attacking a dragon, what's important is that you're attacking and the other person is attacking, and that you both see it. What's not important is knowing precisely which frame of animation the other guy happens to be on."

The terrain engine differs from

most in that it's fractal-based, storing the island's geography not as individual polygons but as a series of scenery-generating algorithms. This enables distant objects to be properly scaled in the player's view without storing every single polygon. It also enables the game's overall level of detail to be scaled up as much as the player's CPU can handle.

Demon Isle is due for release this fall, will run at 640-by-480 in 16-bit color, and will support Direct3D. In the meantime, the busy team at Cat Daddy is substituting long hours and caffeine consumption for a staff of dozens. "You can put out a good game with five people if they all go 120 hours a week," cracks Howe. "The person-hours work out the same."



These very early screens (many surfaces have yet to be texture-mapped, as does the near geography), give a rough idea of *Demon Isle*'s potential

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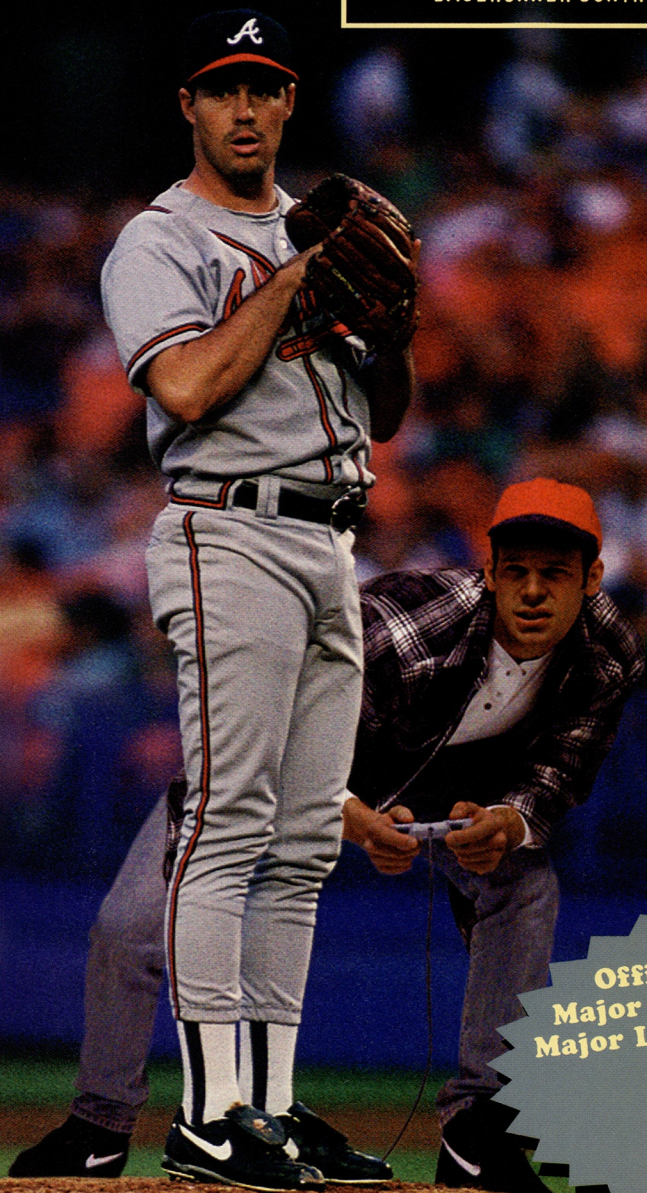
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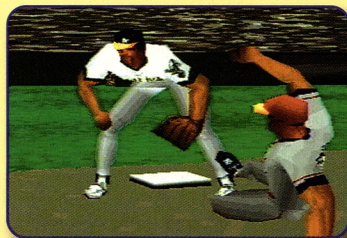
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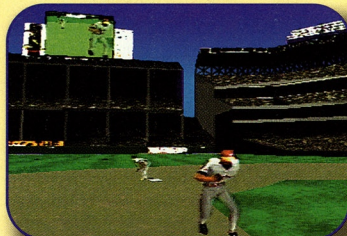
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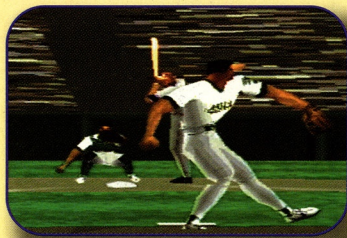
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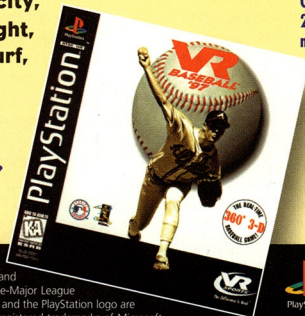
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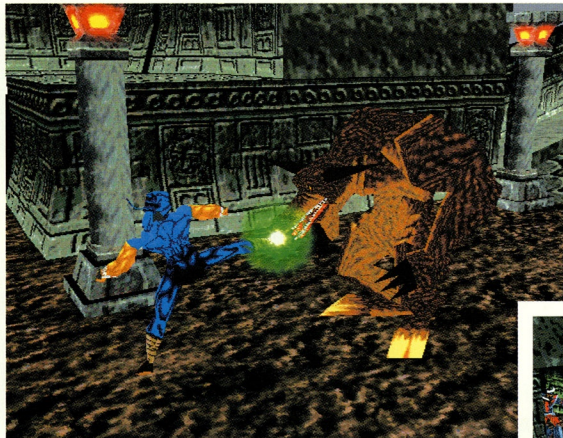


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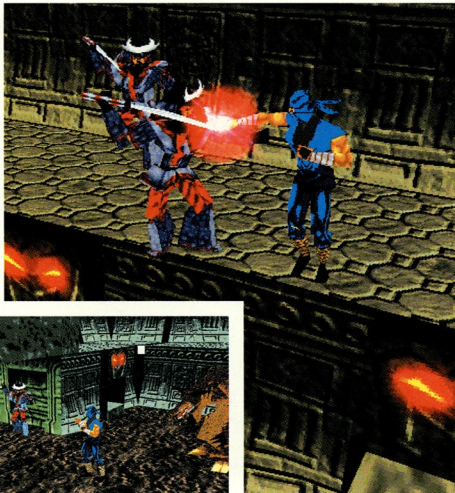
ng alphas

Ninja

With the classic *Tomb Raider* under its belt, Core is working on a martial arts extravaganza of epic proportions. Can lightning strike twice?



Though these shots may inspire comparisons to *The Last Ninja*, Core's game has more in common with Sega's coin-op classic, *Shinobi*



"Ninja is an action game. There won't be a moment when nothing's happening on screen"

Joby Wood, Designer

Core Design, having produced one of the best games of 1996, is about to face its most important year ever.

The question is: how to follow *Tomb Raider*? *Ninja* won't be its first attempt (that's a scrolling beat-'em-up called *Judgment Force*), but the slightly harassed-looking, five-man team piecing it together are hoping it will prove that Core is on a roll. What they're certain of, even at this early stage, is that *Ninja* won't be *Tomb Raider Goes East*.

Designer Joby Wood prefers it that way. "This is not the sequel to *Tomb Raider*," he insists. "*Ninja* is an action game. There's exploration, but there's far less of an emphasis on puzzle solving and there are virtually no empty screens. There won't be a moment when nothing's happening on screen."

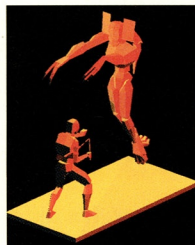
Ninja takes its cues from arcade games *Shinobi* and *Rastan Saga*, melding tried-and-tested 2D gameplay with a real-time 3D environment. Many specifics are yet to be defined. The computer screens that illuminate the *Ninja* development office

Format:	Saturn, PS-X
Publisher:	Core
Developer:	Core
Release Date:	Summer 1997
Origin:	U.K.

are filled with sketches, half-finished Photoshop textures, and cut scenes that still leave much to the imagination. With this in mind, a summer release may seem a little optimistic.

"That occurred to us," Wood confesses. "We've done the hard part, though — the 3D engine. We built the whole thing from scratch. People thought that we'd just rehash the *Tomb Raider* engine over and over. It's a great engine, but it's only really suited to that game, and we didn't want to be constrained by it. *Tomb Raider* was constructed differently. It was all interiors, which is fine, but you need a different approach when you're creating a landscape."

Tomb Raider was built on a giant grid with connecting rooms. *Ninja* consists of ten levels: some interiors, some exteriors, and a mixture of both, which creates as many opportunities as it does problems. There is, for example, a



This shot reveals how the team has used master transparency effects and wire-frame versions to perfect the final product for Saturn



There's a far greater variety of enemies in *Ninja* than in *Tomb Raider*, and each has its own variety of attacks and individual AI routines

more varied visual mix. Despite its unrivaled gameplay, *Tomb Raider's* environments were never very varied or detailed since the emphasis was on the dynamic camera. That level of interaction won't be possible in *Ninja*, and nor is it desirable in a game that relies more on combat than pixel-perfect leaps and dives. The in-game view is closer to isometric than full 3D, particularly during the exterior levels, and while the team insists that there's been no trade-off, this seems to afford *Ninja* a more detailed environment.

"All the effort so far has gone into creating this detailed world. We've been concentrating on how we can get this world to function, to hang together and appear solid. We've only just got to that stage," concedes Wood. "As for trade-offs, we still have a dynamic camera, but we don't enable the player to move it around. Originally, the in-game view used a very low camera, which got everybody really excited because they thought it looked like *Virtua Fighter*.

The problem with that was that it became virtually unplayable, because we have multiple enemies attacking you from all sides. For that you need to pull the camera back. It's a smart camera, so it works it out for you. Those close-ups will be in there, but only if you're fighting one-on-one. We don't want aesthetics getting in the way of gameplay. Having said that, the world is far more detailed than *Tomb Raider's*."

A glance at the beta-version Saturn engine confirms the wisdom of spending so much time creating such a versatile world editor. Lush forests, craggy mountains, and sapphire-hued lakes scroll by as the ninja sprints around, and



The *Ninja* team (below, clockwise from top left): Brian Tomczyk (artist), Joby Wood (designer), Dan Scott (PlayStation programmer), Jerr O'Carroll (animator), Martin Jensen (Saturn programmer), and Del Leigh-Gilchrest (PlayStation programmer)

the detail is impressive. Camp fires litter clearings, buildings are filled with furniture, and plants sprout from between rocks. It's an altogether different feel to the stark, cavernous interiors of *Tomb Raider*.

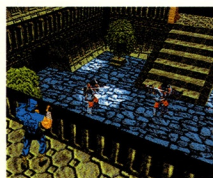
The game is being developed jointly on both Saturn and PlayStation, but Core has always been keen on Saturn, and its dedication to what is regarded by many as the inferior machine will pay dividends with *Ninja*.

"It hasn't been easy," says Wood. "When we first started chucking ideas around for *Ninja*, the programmer, Martin Jensen, just sat there thinking



Those expecting *Ninja* to be *Tomb Raider 2* will be disappointed. Leading on the Saturn (the most popular format at Core), it was never intended to be anything other than an action-packed beat 'em up, an extension of 2D arcade combat platform games with traditional bosses and multiple enemies, as well as magical power-ups

ng alphas



Ninja is unquestionably an action-packed game



how an earth he was going to achieve all this stuff. He'd just got the Saturn development kit, and it was all new. You have to allow for that, and the changes that come with greater know-how. Sega's libraries are getting better, and although we don't rely on them, it helps to know how Saturn is evolving. We've done one thing in particular that will really impress Saturn owners."

Core has found a way to create transparencies on Saturn, using it impressively in the river sections

Core is now creating transparencies on Saturn, and it's using it impressively in *Ninja*'s river sections. This was something sadly missing from the Saturn version of *Tomb Raider*, and many believed it couldn't be done. So how has Core done it? Artist Brian Tomczyk explains: "We've used the Saturn's Mode 7 to create the floor surfaces for the game [a similar effect to *VF21*], and the performance benefit has enabled us to tag objects and to depth-cue them as either above or below that floor level. If they're below, they have a palette change. There will be enemies beneath the surface that you can see swimming around. They'll leap up at you as you try to cross in the shallows. We've also used a similar effect for one of the magical weapons which creates a transparent blast. It's



Creating the advanced world-building engine has occupied the team since the project began. The world is far more detailed than the dark interiors of *Tomb Raider*, with complex textures and vast exterior levels featuring mountains, ravines, bridges, caves and castles — all brimming over with monsters

no big deal on PlayStation, but it's a step forward on Saturn."

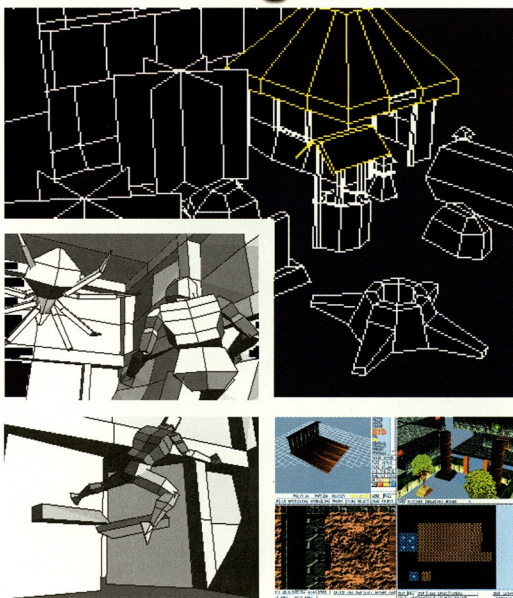
So far, there's been little talk of a plot, but that's somehow reassuring. The priority is to get the gameplay right and to keep the momentum going. There'll be no in-game prerendered scenes to slow the pace, only tight, atmospheric cut scenes using the in-game graphics engine. Jerr O'Carroll, lead animator, has a healthy disrespect for FMV and prefers to take the Japanese approach familiar to games like *Zelda*.

"The best way to do it is to have the cut scene as part of the action. You let the player walk into a cave, and then you let the game take over for a few seconds to set the mood. You might change the camera angle or zoom in or out. We'll use this technique to introduce the end-of-level bosses. It maintains the pace."

That's precisely what the *Ninja* team will be doing over the next six months. Having prepared the groundwork, they'll piece all their ideas together and populate the world they've worked so hard to create. "What are we going to do now?" ponders Wood. "We're going to sit down, take a deep breath, relax, and get all our ideas down on paper. There's a lot to do, but it's going to be worth it."



Joby Wood, the project's chief designer, claims the team has closely studied cult TV shows such as "Monkey" to get a feel for the *Ninja* world



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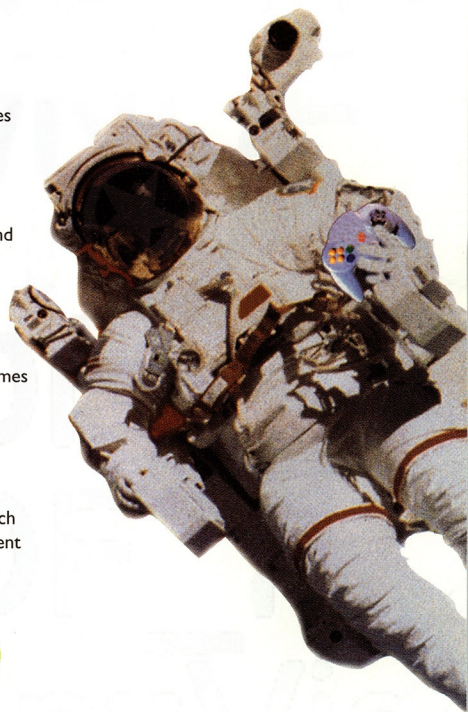
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Mario Kart 64 Nintendo 64 NBA Shoot Out '97 PlayStation Goal Storm '97 PlayStation Manx TT Saturn
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Our game reviews are the best in the west

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101 PlayStation
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Why buy a bad game? Next Generation reviews and rate the month's new game releases so you don't have to. Our opinion as to each game's merits can be found in the text, but refer the following ratings as a rough guide to a game's worth (or lack of any worth).

★★★★★

Revolutionary

Brilliantly conceived and flawlessly executed; a new high watermark.

★★★★

Excellent

A high-quality and inventive new game. Either a step forward for an existing genre, or a successful attempt at creating a new one.

★★★

Good

A solid and competitive example of an established game style.

★★

Average

Perhaps competent; certainly uninspired.

★

Bad

Crucially flawed in design or application.

Nintendo 64

FIFA Soccer 64

Publisher: Electronic Arts
Developer: EA Canada

Oh, how the mighty have fallen! FIFA is no longer the soccer game to beat. In fact, it isn't even the best soccer game on software-starved Nintendo 64. Konami's *J-League Perfect Striker* has found the playability and realism that FIFA seems to have forgotten.



The ball physics in FIFA Soccer 64 is atrocious. Instead of bouncing or rolling, the ball just slides to a dead halt. It's simply awful

All the problems that the PlayStation version had are still present in Nintendo 64's version, including poor animation and completely unrealistic ball physics. What has been improved are the graphics and speed. The typical Nintendo 64 polished look is here, and the speed of the players and game is much better. However, because of the cart format, the super-slick intro is gone, which robs the game of its one eye-catching feature and only underscores how badly the game fails to measure up to other soccer titles on the market.

The only advantage FIFA has over other soccer games is the complete international players license, which means you can play through World Cup games with the real players. However, when you look at quality games like *J-League* and *Goal Storm '97*, you realize that the poorly designed FIFA needs some major retooling.

Rating: ★★

J-League Perfect Striker (Japan)

Publisher: Konami
Developer: Konami

This excellent multiplayer game is a highly respectable mix of soccer

sim and arcade playing styles. *J-League Perfect Striker* sets the standard for Nintendo 64 soccer games, and indeed all sports titles. Multiple gameplay options, great control, and above average graphics make this one a tough contender.

The game's 22 rather large, gracefully moving players rove about realistically onscreen and are the most immediately striking feature. Forwards actually look back and around to see if opponents are coming before they strike. Goalies dive and protect their nets with natural human motions, and the realistic gravity of their lunging dives is superb. The game also shows off the typical anti-aliased, z-buffered look that has defined previous Nintendo 64 games, and the motion-capture work is excellent, fluid, and rarely detracts from the solid control.

Taking advantage of Nintendo 64's multiple control buttons,

including camera angles, several different playing modes, lots of teams and strategy configurations, optional rules and regulations, and choices for saving on Memory Paks. Multiplayer options enable players to go two-on-two, one-on-two, or any variation involving one through four players, and this option is surely the best part of the game.

Where the simulation quickly sinks is in the AI. The game reeks of an arcade game's pick-up-and-play approach — which is fine — but it's ridiculously easy to trounce the AI, and the loose action and outrageous one-man scoring drives are certainly targeted at non-sim audiences. Within minutes of playing, gamers can drive down the field alone and score, and goals can reach into double digits by the game's end. Goalies are also a trouble spot. They may look like they're in the right position, but the ball often



Although goalie action can be disturbing and frustrating, the rest of the gameplay makes up for it. Perfect Striker is full of cool moves, many of which are usable directly from one-button touches. The game features excellent animation as well, and the characters are wonderfully big

Konami built many moves into the three-pronged controller: at their fingertips, players can give-and-go, sprint, lob, pass, even heel pass, and perform other cool tricks with the touch of a button. Quick taps of the pass button make players immediately pass in succession to the nearest team member. *Perfect Striker* is packed with options,

seems to frustratingly pass right through their midfields.

J-League Perfect Striker goes farther than most titles in presenting a fantastic look and feel. Just make sure you have a few friends around to play it, otherwise you'll tire from 10-3 wins real quick.

Rating: ★★★★★

Mario Kart 64

Publisher: Nintendo
Developer: Nintendo

The sequel to the fantastic 16-bit game on Super NES, *Mario Kart 64* continues the delectable kart style of racing found on its predecessor and brings with it graphic embellishments, new power-ups, loads of new courses, a few brilliant touches, and a few disappointments.

(at least in the one- and two-player modes), and the battle-heavy racing is generally so engaging it's difficult to quibble about it having been done before.

After a few hours, gamers will realize, to their annoyance, that the AI is really cheating. Clearly bypassed opponents are likely to be waiting in a player's shadow, no matter how long ago they were passed or how much damage was



Mario Kart 64 is packed with gameplay, and the depth enters in at many levels: Multiplayer gaming, Battle Sport mode, Time Trials, or just simply trying to beat the Special Cup courses for the Mirror courses

The game delivers loads of gameplay: four racing cups in *Mario Grand Prix* (each consists of four races making 16 in all), four courses in the well-loved Battle Mode, plus Time Trials and mirror courses for players who've achieved gold in all four cups. A mix of new power-ups join the old. Red and green shells work the way players will remember, but they now include defensive capabilities. Standard red mushrooms provide a rocket-boost and can be collected in groups of three, while orange mushrooms can be accessed repeatedly for limited periods. And yes, the drop and forget bananas are back.

Kart and driver design is similar to the that of the game's 16-bit predecessor, with tiny, sprite-based, sliding little vehicles, piloted by Mario, Luigi, Wario, Toad, Bowser, Yoshi, Donkey Kong, or Peach. It's disappointing that Nintendo's own developers didn't give *Mario Kart 64*'s racers the polygonal touch. In fact, one could argue this is less a sequel than the same game with new courses; the polygon tracks aren't functionally different from the Mode 7 bitmaps of the original. Still, the frame rate is high enough to keep everything fluid

inflicted on them. And inevitably, despite Nintendo 64's hardware power, four-player competition and Battle Mode hit slowdown so that players' karts lag.

In the final analysis, *Mario Kart 64* isn't as bold or as deep as the first 16-bit venture. It's a good game, and while clearly a newly enhanced version, it's nothing more than a great 16-bit game in 64-bit clothing.

Rating: ★★

PlayStation

BRAHMA Force: The Assault On Beltlogger 9

Publisher: Jaleco
Developer: Genki

On paper, a new first-person shooter from Genki, the team that created the abysmal *Kileak* series (known as *Epidemic* in the U.S.), seems like a set up for another boring corridor crawl. In execution however, it's not half bad.

A terrorist organization has seized control of an outer space mining colony, and as a part of the BRAHMA Force, players don a mech suit and right wrongs. It's the basic sci-fi *Doom* plot, pushing the lone gunman into a fortress full of baddies, but BRAHMA has just enough

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rating playstation

intelligent nuances to make it more than a cookie-cutter title. The control of the suit, which one might presuppose would be very slow and cumbersome, is actually quite smooth and moves

rather speedily. Moving through the corridors is a breeze and doesn't have any of the "corner stickiness" sometimes found in first-person shooters. But perhaps the best and most

inventive feature of the suit is the mobility it gives the player. The suit can jump and make short range flights, which opens up a whole new level of gameplay. A large part of the game involves jumping across moving platforms, although given the perspective it's sometimes difficult to see where you're going. Think of it as *Jumping Flash!* without the cuteness and you've got the idea.

BRAHMA Force does have its down sides though. The graphics are not horrible by any stretch but are still somewhat lackluster, and even the contribution of *Z-Gundam's* Makoto Kobayashi, brought in to help create a strong visual style for the game, doesn't help much. The game also has a nasty habit of pausing the action to receive communication transmissions from fellow **BRAHMA Force** members.

However, the game's ultimate strength lies in its gameplay, which is smartly controlled and to the point. The variety of weapons, the

intelligence of level design, and the perfect degree of difficulty all combine to make **BRAHMA Force** a surprisingly good game.

Rating: ★★★

Buster Bros Collection

Publisher: Capcom

Developer: Hudson Soft

Shoot a pointy-tipped chain up at balloons which, if they touch you, will kill you. Killer balloons? It's one of the strangest premises ever, but who cares? It's fun.

Buster Bros. Collection compiles three *Buster Bros.* games (*Buster Bros.* from 1989, the Super NES port *Super Buster Bros.* from 1990, and 1995's *Buster Bros. 3*) on one disc. That's quite a bit of balloon popping, as all the games are essentially the same with minor differences. The original starts the shooting-at-balloons madness, while *Super BB* adds the novelty of not stopping the action between levels. Finally, *BB3* adds prerendered characters to the game, and it is this one that most people will



Developer Genki seems to have learned something. Intelligent level design and solid control save **BRAHMA Force** from being just another *Epidemic*

PlayStation

HOOPLA

NBA Shoot Out '97

Publisher: Sony

Developer: Sony

Last year's *Shoot Out* was stiff, slow, and completely devoid of fun. That left a big karmic hurdle for *Shoot Out '97*, but we're pleased to report that the challenge has been met.

Shoot Out '97 is the first true basketball simulation for a console. For once, the player ratings aren't just pretty numbers on a screen that minimally affect gameplay. Instead, fast players like Rod Strickland race right past slower players like Felton Spencer, and shooters like Glenn Rice light it up. Accurate ratings give each player on the roster a individual personality and skill set, and the key in *SO '97* is to use the right player at the right time.



The game's use of real players and realistic stats ensure that Glenn Rice will be lighting it up from downtown

The game comes with several basic offensive sets and two levels of defensive pressure. In each offense, the players are active cutting to the hole and setting picks. The player who runs the offense properly gets open looks, dunks, and alley-oops. Essential to running the offense properly is the new icon passing, which enables the player to run the break with precision, throw skip passes, and generally control the ball. The old passing method — pressing X and popping the ball to the nearest players — is still there, but getting to grips with the precision of icon passing is key to enjoying this game.

These features make *Shoot Out '97* the best basketball simulation available; however, it still can't compete with Konami's *In The Zone 2* when it comes to fun, playable, two-player games. What's missing is player control — the game has an almost clinical feel, almost as if the player isn't really affecting the outcome of plays. Therefore, we suggest *Shoot Out '97* for season play and hard-core basketball fanatics, but still recommend *In The Zone 2* as the best choice for trash-talking, multiplayer games.

Rating: ★★★★★



Just like in other b-ball games, the dunks are great the first few times you see them, but a wider variety is definitely necessary

Oh, my.



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probably play.

Completely sprite-based, *Buster Bros. Collection* does seem horribly dated, even when playing '95's *BB3*. However, the game succeeds where many retro-style games fail because it's simplistic and fun. Whether you're popping balloons, picking up power-ups, or poking cats and dogs with your pointy-tipped chain, *Buster Bros. Collection* is totally infectious.

Which isn't to say it's a game everyone will like. The



Busting balloons in front of great art — we don't pretend to understand *Buster Bros. Collection* either

characters are a little too cute (and, for example, when Don Tacos beats his maracas on the ground, a little too stereotyped) for some, and the gameplay is almost childlike. But fans of *Bust-A-Move* and other simple puzzle games may get a kick out of this one.

Rating: ★★★

The Crow: City Of Angels

Publisher: Acclaim
Developer: Gray Matter

When a prerelease copy of *The Crow: City Of Angels* arrived in



The Crow: City Of Angels is about as fresh as its rotting protagonist

our offices, we were amazed at how much work still needed to be done on the game. Control was horrible, it was very difficult to see what was going on, and collision detection was extremely inaccurate. Well, after seeing the final release version that will appear on store shelves, we were horrified to learn that the prerelease version we played was essentially complete after all.

Based (loosely) on the movie of the same name, *The Crow: City Of Angels* drags the protagonist Ashe back from the dead to exact revenge on the gang members who shot him in the head. Sort of a *Final Fight* for the 3D era, *The Crow* throws bad guy after bad guy at Ashe, who all repeat the same clever line, "Hey, Clown face." Riveting.

The Crow was developed by Gray Matter, the folks who brought us last year's *Perfect Weapon*. In fact, *The Crow* seems to be based heavily on *Perfect*'s engine, with a similarly frustrating control scheme. As Ashe will only move forward (maybe dead people can't walk backwards), he must be constantly stopped and rotated to begin moving in the desired direction. Executing moves and connecting with enemies is also frustratingly difficult, which makes the exercise totally pointless since this is, after all, the title's sole gameplay element. It's next to impossible to face the right direction, and the collision detection is so horrible it wouldn't matter if you could.

If Acclaim truly intends to survive through to the next generation, it had better rethink its strategy. Crap like this has no reason to exist.

Rating: ★

Goal Storm '97

Publisher: Konami
Developer: Konami

Konami continues its impressive showing in the sports game market with the sequel to *Goal Storm*. The original *Goal Storm* came out at the same time as the launch of the PlayStation and showcased amazing graphics and fast arcade play. *Goal Storm '97* takes the solid



Special moves give the player unprecedented control over all of the action. Everything from jukes to bicycle kicks are included and are, for the most part, pretty easy to pull off

values of the original and pushes them even further on all counts.

What separates *Goal Storm '97* from other soccer titles is amazing AI — the players all react and play like real World Cup players. The only way to score goals is to control the ball down the pitch for a cross or a through pass, because amateurish long balls are quickly picked off by the defensive side. Just as in real soccer, possession of the ball down the field is critical. All the major international teams are present, and although there is no players license, World Cup fans will find it easy to spot certain players by the way the characters on the screen look. England, for example, has a yellow-haired midfielder who is obviously based on Paul Gascoigne.

Goal Storm '97 can't compare with *Worldwide Soccer '97* for Saturn when it comes to graphics or control, but soccer fans will definitely appreciate the pace and strategy of the game, and PlayStation owners can rest assured this game is a very close second. In fact, it's easily one of the most realistic soccer games available for a console, and it is merely a few tweaks shy of being the most fun.

Rating: ★★★

K-1 The Arena Fighters

Publisher: THQ
Developer: XING

Much like THQ's other current release, *WCW Vs The World, K-1 The Arena Fighters* is an example of how little can be put into a game that's still released.

K-1 simulates the exciting world of international kickboxing, a sport sorely under-represented in realistic fighting



games. The designers have tried to make *K-1* more of a kickboxing sim than a traditional arcade fighting game, so the control scheme only enables "normal" punching and kicking — no fireballs or sonic booms here. To add to the sim aspect, the game has two health meters instead of one. The top shows health or stamina, while the bottom is a measure of current physical strength. Furious button mashing will only drain strength and weaken a fighter's attacks, so conservation is the key to winning matches. One or two good punches can often be enough to knock an opponent down. Three downs, or a knockout, wins.



Slow response time and limited moves knock *K-1 The Arena Fighters* to the canvas



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While the developers should be given credit for trying to add realism to a fighting genre, the implementation of the actual game mechanics is another story entirely. Plagued by an annoyingly slow response, *K-1* ends up being an exercise in frustration. For all practical purposes, players are limited to just one or two punches or kicks, which sacrifices gameplay for realism and quickly grows quite tiresome.

Rating: ★★

League Of Pain

Publisher: Psygnosis

Developer: Beyond Reality

In the future, all sports will be hybrids of current sports and will involve a great deal of violence. Oh, and there won't be any rules at all either. This pretty much sums up all science fiction treatment of future sports, from James Caan in *Rollerball* to *Accolade's Pitball*. *League Of Pain* is not any different.

Combining elements of ice hockey, basketball, and lacrosse (the ancient Aztec sport), *League Of Pain* pits two teams of four against each other. A glowing ball is shot into the arena to be captured by a team. The ball must be charged in the team's home area for two seconds, and then a goal can be scored in a ring hanging over the center of the court.

League Of Pain is graphically gorgeous. The ball and power-ups thrown into the audience glow and give off impressive light trails. The floor of the arena features a reflection map that highlights the action nicely, and the light sourcing is superb.



League Of Pain is gorgeous. Although the control could be better, the concept is well executed, and the action is hard hitting enough



Off-road racing games currently seem to be all the rage — Rally Cross is one of the better entries into this hot genre

However, control is somewhat problematic, and the enemy AI is so aggressive that passing is rendered almost impossible. Also, the default view is poorly angled, which makes it easy to overshoot the ball. Changing to a lower camera angle helps, but this in turn seems to encourage polygon clipping on team members as they scurry around.

However, once players get the hang of the game's fast pace and rhythms, the game does become mildly addictive. With 16 international teams and an option that lets you customize and trade players, *League Of Pain* offers an interesting alternative to the standard "real" sports games. And you have to love a game with violence and no rules.

Rating: ★★

Rally Cross

Publisher: Sony

Developer: Sony

A category once dominated by *Sega Rally Championship*, the off-road racing game seems to be the hot genre of the videogame scene of late. Games like *TNN Hardcore 4x4*, *Thunder Truck Rally*, *Test Drive Off-road*, and *VMX Racing* all give slightly different spins to the idea, but *Rally Cross* is the only off-road racer that really compares to *Sega's* classic offering.

The graphics featured in *Rally Cross* are excellent for the most part. The six distinct tracks (with three variations of each) recreate an exquisitely detailed environment that looks absolutely real from a distance. The cars are adequately represented with animations of their suspensions that look authentic. The only real complaint, at least about graphics, involves the over-pixelated splashing mud and water. On the other hand, the look of the dust kicked up by tires is rather beautiful.

Gamers who look for intense, heart-pounding speed in racing games may be a little disappointed with *Rally Cross's* gameplay, which has a more realistic emphasis in depicting the terrain-influenced nature of *Rally* racing. What the game lacks in outright speed, however, is more than made up for by the strategy that is required to select the best line through the undulating tracks.

Cars tend to roll (or be rolled by) other cars, and this feature is simultaneously entertaining and frustrating. It's unrealistically easy to flip a car, and that introduces a steep

learning curve and often leaves the player like a turtle flipped on its back while other competitors speed by. Careful driving and keeping to the right line through the tracks is the only way to avoid this trouble, which makes the game more technical and less speedy.

With a plethora of tracks, two-player split-screen action, and beautiful environments, the depth of *Rally Cross* exceeds that of the mighty *Sega Rally Championship*. With a less demanding physics model and less bouncing, it could have exceeded its gameplay as well, but within its own view of the universe, it excels.

Rating: ★★★★★

Sentient

Publisher: Psygnosis

Developer: Psygnosis

Citing 2001: A Space Odyssey and Frank Herbert's *Dune* series as influences, Psygnosis has constructed a decidedly non-linear adventure game that's part RPG, part graphic adventure, and part surreal metaphysical nightmare. In this futuristic game, Garrit, a medical technician, has been sent to the Space Station Icarus to investigate an outbreak of radiation sickness. His shuttle crashes while docking, and things just get weirder from there.

Sentient has been designed less as a traditional RPG and more as a story to be experienced — and experienced more than once. Six distinct plotlines all run parallel to each other. The plotline is determined by who the player talks to, and more importantly, what is said.



While its characters are weird, Sentient has an impressive conversation system

Conversations are a large part of *Sentient*, and the variety of dialog in the game is very impressive. Facial expressions are also important; a face can be changed between four different emotional states, and NPCs react accordingly.

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However, *Sentient* does suffer from distracting graphics. Everything has a grainy, unfinished quality to it, and the characters are laughably surreal. To be fair, *Sentient* is a rather large game, and perhaps graphic quality was sacrificed in favor of quantity. The design however, especially of the characters' faces, is just plain strange. And while this gives the game a rather distinct atmosphere, it may not be to everyone's taste.

Ultimately, *Sentient* succeeds at what it set out to do, which was to forge some new territory in graphic adventures. Besides, any game that lets you insult perfect strangers and not get clobbered has to be pretty cool.

Rating: ★★

Twisted Metal 2

Publisher: Sony

Developer: SingleTrac

Twisted Metal was one of the most popular titles available in the early days of the PlayStation, and was noteworthy because of its interactive 3D environments and its own particular brand of mayhem. Its main drawbacks — questionable graphics and a serious lack of depth — have thankfully been addressed and corrected in the much anticipated sequel, *Twisted Metal 2*.

The graphics in the first *Twisted Metal* were grainy, with an overabundance of polygon-clipping problems. Perhaps due to a more relaxed production schedule (we understand the original was rushed to get it out the door in time for the release of PlayStation), *TM2* shows significant improvement with sharper textures, a significant reduction in clipping, and even an improved frame rate.



Travel to exotic locales, kill, and blow things up — *Twisted Metal 2* is the ultimate vacation

TM2 is also a significantly deeper game, with eight larger and more challenging levels. Each one is also more intricate and interactive, with a bevy of hidden areas. One Easter egg, the ability to blow up the Eiffel Tower and form a bridge to the rooftops of Paris, where all the good power-ups are hidden, is a classic videogame moment.

Despite the addition of new weapons such as napalm, remote bombs, ricochet bombs, and a whole new combo attack system, the actual nature of the gameplay in *Twisted Metal 2* has not changed much. That is, the new game is still an intense, adrenaline-pumping experience that leaves the gamer delighting in an orgy of destruction. "Bigger and better" is the best way to describe *Twisted Metal 2* — it satisfies fans of the original and is attractive enough to bring new enthusiasts to the fold.

Rating: ★★★★★

VR Baseball '97

Publisher: Interplay

Developer: VR Sports

After two years of development, *VR Baseball* is finally ready for release. Interplay has managed to

create an amazing 3D world and some spot-on baseball physics. However, the poor frame rate and jerky camera movement severely hold the game back.

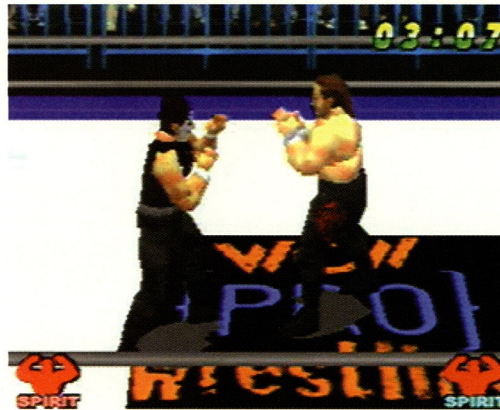
The menuless pitching interface is an effective solution to the pitcher-batter showdown, but the poor, choppy frame rate makes it appear as though the ball never actually strikes the bat. With enough practice the right timing can be found, but the lack of visual reinforcement really hurts. So does its long, frustrating learning curve.

Still, *VR Baseball* has plenty of depth. Different players even have different bat speeds, making it much more difficult to hit with poor swingers, and the fielders also have different arm strengths and ranges. The complete season statistics and stat-tracking, easy-to-use interface, and solid computer AI make it one of the

point of professional wrestling is the drama and scripting of the "fights," and recreating this in a game can be tricky. Acclaim's *WWF Wrestlemania* chose an *NBA Jam*-like approach, with fantastic power-moves substituting for the arch overacting and shouting matches one usually associates with the "sport." The designers of *WCW Vs The World* on the other hand, have decided to play it straight — bad move.

The game is visually bland in the extreme, and the designers have managed to use the fewest number of textures possible and still have the polygon characters remotely resemble their real-life counterparts.

However, the game's control is what makes *WCW* so difficult to play. Maneuvering around the forced perspective ring in 3D is a taxing experience, especially given how the characters don't



WCW Vs The World lacks any of the quirky excitement of "real" wrestling. It's missing an interesting set of moves and lacks graphic style

better baseball simulations.

Still, while *VR Baseball '97* has most of the pieces in place to be a great baseball game, the slow pace of play (baseball is slow enough without needing this particular element to be "simulated") and the dismal frame rate keep this game in the minors. Unfortunately, PlayStation doesn't offer much better in the way of baseball games, and *World Series Baseball 2* on Saturn is still unquestionably the best of the home console bunch.

Rating: ★★

WCW Vs The World

Publisher: T+HQ

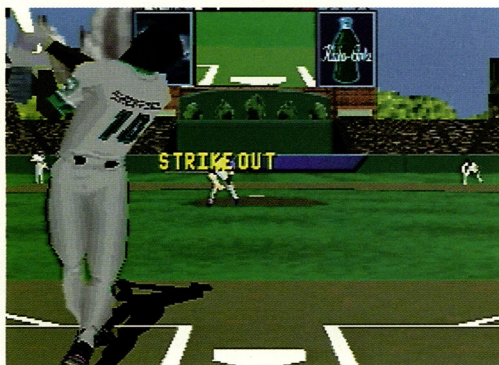
Developer: Asmik

Playing a wrestling videogame is a peculiar experience. The whole

move at more than a snail's pace. However, the actual wrestling moves — throws, headlocks, piledrivers, and so on — are fairly well animated, even if none are unique enough to stand out.

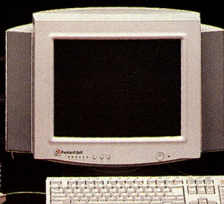
The number of *WCW* wrestlers to choose from, including "Hollywood" Hulk Hogan, is an impressive 52, running the gamut from Sumo wrestlers to masked Mexican heroes (hence the "world" in the title). Players can compete in seven different match types and claim allegiance to any of six leagues, but all this doesn't really amount compared to the game's numerous shortcomings. Perhaps a little flash, à la *Wrestlemania*, would've helped. It certainly couldn't have hurt.

Rating: ★★



Players' names and numbers on the jerseys shows just the kind of attention to detail that really makes *VR Baseball* worth a look

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CLIP AND MAIL

rating saturn

Saturn

Lunacy

Publisher: Atlus

Developer: Sega (Japan)

In a market full of 3D games and fighters, the FMV adventure game survives by catering to those who like to pretend they're in a movie instead of playing a game. It doesn't require a lot of strategy but sometimes results in a satisfying, if linear, experience.

Lunacy, from Atlus, is the latest entry in the genre and represents about the best the FMV adventure can offer. Using computer-generated graphics and animation, the surreal and noirish town of Misty is brought to life with disturbing detail. It's easy to imagine yourself in this strange



Lunacy is an atmospheric title with simplistic, almost minimal gameplay — in other words, your typical prerendered FMV game

world, frantically trying to rediscover your identity.

The characters are equally well fleshed out, with good voice acting and some of the most obscure, mysterious dialogue that you'll find this side of the "X-Files" or an Obsession commercial.

Unfortunately, the game is an FMV adventure, and as such it doesn't offer much gameplay. Puzzles must be solved in an ABC sequence, and it's not uncommon to stumble on a correct solution by sheer chance. *Lunacy*, in fact, has some insultingly easy puzzles, and characters often leave broad hints as to what's needed to pass a given section of the game.

Although not a very deep title, *Lunacy* is just stylish enough to be as entertaining as good late night movie or suspense novel.

Rating: ★★★

Saturn

BIKE ME

Manx TT

Publisher: Sega

Developer: AM3

When Sega released *Manx TT*, a hyper-realistic motorcycle racing game based on the almost sinister Isle of Man races, gamers were wowed by the amazing feeling of speed, the challenging tracks, and the deluxe ride-on cabinet. And now, Saturn owners can play *Manx TT*, like most great Sega arcade games, at home. Let's remember, however, that *Manx TT* was designed as an arcade game. While the producers of the consumer version have added bonus items such as mirrored tracks, an impressive bike selection, a challenge mode, and a two-player, split-screen option, the game still only provides two tracks (four if you consider a track in reverse to be a new track), which just doesn't feel like enough.

What *Manx TT* is missing in depth is made up for in its ability to deliver a thrilling racing experience with an incredibly smooth frame rate, top-notch rider animation (a detail that doesn't mean much until you've seen it), and some of the best control dynamics ever offered in a racing game — provided that you play with the analog controller (otherwise known as the *Nights 3D* controller). These gameplay elements firmly in place, the game's sharp and attractive graphics serve as an added bonus. The Saturn version still doesn't quite compare to the graphic detail of the arcade version and suffers from occasional pop-in problems, but all in all the game looks great. The sound samples recorded at the actual Isle of Man races are another detail delivered direct from the arcade game.



Each lengthy track offers a large variety of challenges in the form of hair-pin curves and straight-aways that encourage speed



A special Challenge mode enables players to earn an enhanced set of reality-based super bikes (above). Among the bonus items added to *Manx TT* for extra replay value in the consumer version are mirror modes of both arcade tracks (right)



Another element added since the arcade version is a head-to-head, two-player mode

In the "half-empty" viewpoint, the limited supply of tracks must be considered a serious dark spot. But, in the end, the small number of minutes aren't nearly enough to cancel out everything great about this game. And there is plenty to be considered great, from the almost scientific control to the long and satisfyingly winding tracks. OK, we've used the phrase a lot lately, but *Manx TT* is without question the best motorcycle racing game available for the home.

Rating: ★★★★★

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Saturn

BUSY

Assault Suits
Leynos
(Japan)Publisher: NCS Masaya
Developer: NCS Masaya

Take *MechWarrior 2*, turn it into a 2D shooter, add in a ton of weapons, put it on a Saturn, and you have NCS Masaya's *Assault Suits Leynos 2*. Although similar to *Sengoku Blade* or *Hyperduel*, this stylistic sequel to the Genesis *Target Earth* pushes the genre by creating a 2D mech sim.

The object is still to destroy anything and everything, but assault suit drivers also need to think strategically. Mission types include defense and duels, so players need to prioritize targets and probe for weaknesses or they'll be eaten alive before they get even halfway through the mission.

However, NCS Masaya's biggest innovation is the in-between level configuration. Although vehicle customization has been available to shooters before, here players have over eight different mech types, 50 different weapons, 15 system enhancements, three targeting systems, and up to eight weapon slots. Each weapon or system has its weight, range, or power costs, and these variables become critical in the heat of battle. Hard-core gamers will find themselves tweaking their mech until they've got the perfect combination.

ASL2 isn't a game for the casual shooter fan. Enjoyable as it is, the game requires a great deal of skill from players. The only quibble expert gamers may have, though, is the number of levels. At seven stages long, you might find yourself finishing before you've perfected your battlesuit.

Rating: ★★★★★



Like other bosses, this cannon is powerful but stupid (top). Assault suit configuration is almost as exciting as playing the actual game itself (above)



Your missions aren't designed around loner tactics — here you work to protect a supply convoy

PC

Banzai Bug

Publisher: Grolier
Developer: Gravity

Banzai Bug is a cute game that is deceptively deep. While it has clearly been aimed and marketed toward a younger audience, many missions are very reminiscent of *X-Wing*.

Players take control of *Banzai Bug*, who has become the unwilling prisoner within the house of an exterminator. It's up to *Banzai* to gather the elements the bug rebellion needs to force the humans from the house so he can return to the fields from whence he came. Missions range from simple "find-the-object"



Banzai Bug puts the player behind the wings of its title character

scenarios to more complex "protect-the-convoy" objectives. One mission revolves around *Banzai* protecting the transport bug convoy from robobugs so they can collect earwax from the sleeping exterminator.

The flight model for the game isn't bad, but it does take some getting used to. Joystick controls could have been massively simplified had the developer supported four-button joysticks. Instead, a

combination of tapping or holding a single button will accomplish different actions. Thus, when you intend to tap, you might wind up holding the button and get unintended results.

Rating: ★★★

A Fork In The Tale

Publisher: Anyriver
Developer: Anyriver

Put in the CD and start the game. "Click." Oh ha ha, Rob Schneider just said something kinda funny. Watch some video. "Click click." Watch more video. "Click." More kinda funny jokes. "Click." Make a decision. "Click." Watch more video. "Click." The End.

That's pretty much all there is to *A Fork in the Tale*. The entire game is full-motion video and is about as much fun as taking your mouse to see *Dumb and Dumber*. Players get to click at certain times, and the speed and accuracy of the mouse clicks determines the outcome of the FMV — which, if the right choice is made, means the opportunity to watch even more FMV.

Rob Schneider, star of "Men Behaving Badly," can be pretty entertaining. In fact, unless we're mistaken, Schneider was brought on fairly late in the product's development, and his delivery isn't qualitatively better than the "dummy" voice-over we heard in earlier versions without him.

As with many FMV-based titles, *A Fork in the Tale* is nothing more than a semi-interactive movie rental. Considering the cost, you might as well put the money into buying a movie for your VCR — at least you'll know it's good, and you'll get to watch it with some popcorn and soda.

Rating: ★



During one of *A Fork in the Tale*'s typical FMV scenes, players click the right places, or this guy's face ends up smashing into the camera

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G-Nome**Publisher:** 7th Level**Developer:** 7th Level

Yes, it's another mechanized, fifty-foot tall, armor- and weapon-laden, *MechWarrior*- and *EarthSiege*-type game. Yes, it has features we've never seen in a game of its type before. But does that make it a better game? Sadly, in the end, no, not really.

Sure, players can get out of the mech and run around on the ground outside and shoot at the enemy, and use a handy little gun called a Gasher to force other guys out of their vehicles so they can take them over, but that's



Running around outside of a mech in *G-Nome* can be dangerous, but at least it's a new twist in an otherwise run-of-the-mill 'mech title

only a small portion of the game. Really, the missions singularly make *G-Nome* worthwhile. They vary from simple blast-fests (always fun when you're stressed) to more complicated tasks such as infiltrating an enemy outpost to gain its vehicle signal so you can walk right through patrols. The game supports Intel's new MMX technology, and that's something to see, but it still doesn't come close to making the graphics better than *MechWarrior*'s 3D-accelerated version.

While it admittedly introduces some interesting new elements, *G-Nome* doesn't put much of a dent in the *MechWarrior* genre. Since this is what it's trying to do, it's just not enough.

Rating: ★★**PC****SPOOKY**

As you explore the mansion your father lived in before he died, you'll uncover more mysteries than you would probably want to

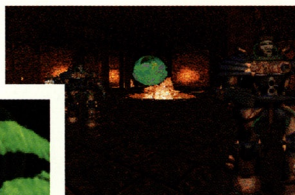
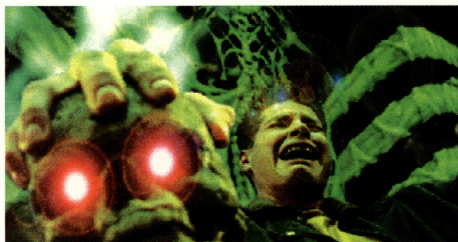
Realms of the Haunting**Publisher:** Interplay**Developer:** Gremlin

Take a bit of *System Shock* or *Ultima Underworld* and mix it with the spooky parts of *The 7th Guest* or *The Beast Within*, and you'll have a good understanding of what *Realms of the Haunting* is all about. The adventure portion of the game starts in a mysterious old house and eventually reaches the depths of Hell itself. Although interspersed with initially unimpressive full-motion video to convey the storyline, *Realms* is a surprisingly entertaining game once you get past the FMV — unlike, say, *Stonekeep*, another first-person adventure title from Interplay that featured an initially impressive intro but devolved into creaky, disappointing gameplay.

Although two different graphics modes customize the game for machines of varying

horsepower, the game must be played in high-res to be truly appreciated. It might speed things up a bit, but the default low-res view is simply too pixelated and ugly to deal with. The controls take some getting used to (arrow keys move, while the mouse uses and looks at objects), but considering the game takes upwards of 80 to 100 hours to complete, players should have plenty of time to get the hang of it.

And this is what makes the game so amazing: it's huge. *Realms* features more areas to explore than you can count, and each one contains its own textures and architecture. The developers rarely use the same design twice in different areas, and the monsters range from mechanized borg-like creatures to spiritual nightmares. The game comes on four CDs, and although at first it might be tempting to believe the full-motion video takes up all the space, it's obviously dedicated at least as much to game data and the wide variety of styles and textures contained within it. For something that came from Interplay with very little fanfare, *Realms of the Haunting* could be one of the best adventure games of this year.

Rating: ★★★★★

Extras from *Star Trek*'s new movie landed a starring role in *Realms of the Haunting* (above). The video cut-scenes usually don't last too long, and the story is actually pretty interesting (left)

Koala Lumpur: Journey to the Edge**Publisher:** Broderbund**Developer:** Broderbund

More often than not, game designers try way too hard to make a character "cool," with laughable results. With *Koala Lumpur: Journey to the Edge*, you can chalk one up for the designers because these characters have, well, character. *Koala Lumpur* is a mystical marsupial in Broderbund's new graphic adventure, and he spits out corny one-liners in an Indian accent (we thought koalas came from Australia, but whatever). You play Koala's road buddy, Fly. Dr. Dingo Tu-far (he's handy with the one-liners as well) completes the trio, and the three are on the hunt for pieces of a lost scroll to save the Cartoon Universe.

Great characters can go a long way in boosting entertainment value, but playability is still key. In the end, good puzzles and strategy challenges are the deciding factor on whether or not a graphic adventure takes off. *Koala* stumbles a bit in this arena, ignoring logic at times. For example, in *The Land of Lost Things*, Koala and company are trekking through a pipe maze and



Koala Lumpur stumbles a bit in its gameplay, but charming characters and inventive gags keep it moving along

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PC

WELL ROUNDED

Ecstatica 2**Publisher:** Psygnosis**Developer:** Andrew Spencer Studios

Every once in a while a game comes along that exploits a seldom seen technology or idea in such a way that it eventually influences a number of subsequent titles. With luck, *Ecstatica 2* will be one of these. Graphically, *Ecstatica 2* has few equals. The ellipsoid engine has been significantly upgraded from the already excellent work done for the original *Ecstatica*, which enabled the developers to beautifully animate the characters with great smoothness. While the ellipsoids are not texture-mapped, they are all nicely Gouraud shaded. Backgrounds are prerendered in the style of *Alone in the Dark* or *Resident Evil* and use fractal-enhanced bump maps and texture maps. All in all, the effect is stunning.

However, despite the prerendered backgrounds, the game plays very much like *Tomb Raider*, except, of course, that instead of the camera



The game's graphics are eye-catching, but it's the depth and variety of gameplay that holds *Ecstatica 2* together

following your character around, it remains at a fixed point.

The player's

character has a number of attacks and can arm himself with weapons (with a sword being the weapon of choice) and eventually learn magic. As with *Tomb Raider*, your character can jump, run, evade by rolling left or right, and more.

But while the high degree of action is appreciated, the lack of a dynamic camera proves to be more than a cosmetic omission. Unfortunately, each time the camera position shifts, there is a slight load time as the disk is accessed for new data. Furthermore, with the fixed camera positions, it is at times difficult to see items that may be obscured, or worse, hiding enemies or traps in the next room which you walk headlong into.

With the wide variety of characters to fight (who are extremely tenacious), obstacles to avoid, and puzzles to solve, *Ecstatica 2* will provide hours of challenge as the difficulty level is almost certainly geared towards experienced gamers. Andrew Spencer, the designer of *Ecstatica* and its graphic engine, is currently at work on a new title called *Urban Decay*. We can only hope the prerendered scenery, while pretty, will be chucked in favor of a full 3D environment with a dynamic camera, as the fixed viewpoint is this game's only downside.

Rating: ★★★★★



Combat is both intuitive and exciting — a good thing since action in general and fighting in particular take more of the center stage

run into an area protected by laser beams. Instead of finding an "off" switch or some other logical answer, the three find they need to use a bone picked up earlier as the entry key, a choice that doesn't follow any visual or historical clues.

Other puzzles are inventive and provide a good chuckle. Especially amusing are the run-ins with Dr. Dingo's bitter ex-girlfriend and a cross-dressing episode Dr. Dingo finds himself in against his will.

Koala Lumpur doesn't quite strike the perfect balance between challenging and tedious, erring a little toward the side of tedious, but *Koala* and Dingo's sparkling personalities greatly alleviate the occasional frustrating patch. The title is corny at times, but charming and a lot of fun.

Rating: ★★★

M.A.X.**Publisher:** Interplay**Developer:** Interplay

If you're a fan of turn-based strategy games, you won't want to miss *M.A.X.* Played from a

top-down perspective on a 2D grid, you colonize the surface of an alien planet and build and protect escospheres while preventing the computer opponents from doing the same.



In a sea of real-time strategy titles, *M. A. X.* revives the turn-based strategy game with style, providing challenge and variety

The interface is excellent, particularly the zoom slider that helps players quickly scope out the whole battlefield at once.

With a variety of units that can be upgraded and combat that occurs on land, in the sea, or in the air, the game presents a wide array of technical situations. The base-building options are equally as elaborate: if you love building huge, sprawling bases, this is the game to do it with.

M.A.X. has a number of different play options: a linear campaign, some puzzle-based missions, and best of all the ability to start fresh on any of 24 worlds with a variety of computer opponents, difficulty settings, and victory conditions.

The game's only downer is its poorly organized manual, which scatters important information in

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rating pc

different sections, omits significant concepts (such as the alien artifacts), and fails to provide a step-by-step guide to getting started. Once players clear that hurdle and grasp the underlying flow of the game however, they're richly rewarded with a sophisticated, challenging, and enjoyable strategy game with a great deal of replayability.

Rating: ★★

Obsidian

Publisher: SegaSoft

Developer: Rocket Science

It's both amazing and depressing how popular *Myst* has been and continues to be. With the sole exception of *Doom*, it has the most clones of any computer game in existence. Sadly, *Obsidian* is a copycat product that isn't as interesting as the game it imitates.

If you've played *Myst* or any of its clones, you know what to expect. Players use the mouse to negotiate through full-motion video and prerendered screens that scroll by with appalling slowness. The puzzles are about as challenging as something you'd find in a book at the checkout lane in the grocery store, and eventually you'll see enough FMV to get a storyline that has a few interesting wrinkles but is still extremely predictable. We've seen all it before and sadly have the sinking feeling we'll see it again.

The transitions from one section to the next, a mix of prerendered graphics and FMV, are handled with some style — the nanotechnology subplot lends itself to at least one conceptually interesting sequence — but they hardly add anything to gameplay or help out the deadly slow pace.

While the designers have tried to make everything as weird as possible ("Your rules do not apply here," read the ads), that mostly takes the form of adding a lot of extraneous detail that has little to



This rocky spire is where your partner Max disappeared to, and *Obsidian* centers on locating him by solving puzzles

do with puzzles that actually get you somewhere. If you want to play yet another puzzle game, you might as well get *Myst*. At least that has the infamy of being first. *Obsidian* is just another rip-off.

Rating: ★

Powerslave

Publisher: Playmates

Developer: Lobotomy

Powerslave uses 3D Realms's "Build" engine of *Duke Nukem 3D* fame, but Lobotomy must have used an older version than *Duke* did or bought a discounted one. This version doesn't do slopes, doesn't have many high-res modes, and limits the possible player interaction.

Players must clear out a series of Egyptian ruins infested with aliens. The game offers the standard array of weapons: pistol, machine gun, hand grenades, and some mystical items such as a mummy's hand and a staff that calls down the wrath of the gods. But beyond these basics, there's a little in the way of fun items such as *Duke*'s jetpack, Holodukes, or shrinking guns. Further, there's no way to save the game at any point along the journey, as you can in 99% of *Doom*-style games. Instead, getting to special scarab points is the only way to save.

On the up side, the levels are put together very well and offer a

lot of variety and color. Some monsters are also clever, such as the cat-women who teleport through the sand or the giant fire beasts who pop out of lava pits. But overall, *Powerslave* offers too little too late to compete with genre heavyweights *Quake* and *Duke*, or newer "Build" engine titles such as *Shadow Warrior* or *Blood*.

Rating: ★★

Scarab

Publisher: Electronic Arts

Developer: Electronic Arts

Set in ancient Egypt where gods war against each other using mechanized soldiers, *Scarab* mixes various parts of *MechWarrior II* and *Doom* with some of *Command & Conquer* in a rather pleasant whole. The game combines strategy and action as you wander through a city on the lookout for the enemy while planting towers to generate power. The winner either kills the



The graphics may not be the best, but especially as a multiplayer game, *Scarab* still has enough new angles to make it pretty entertaining

other player three times (or kills three players — you can go up against one to five computer-controlled opponents, or five human players over a LAN) or plants enough towers to exceed the power required to win the city, in which case a timer will start counting down. Once the counter reaches zero, the city is won.

The graphics are neither splendid nor lacking. The play control, though complex at first, tends to grow on you. The multiplayer aspect of *Scarab* is nice; the game supports LAN or Internet play over Mplayer. Although the missions vary a bit, they mostly stay within the same vein — kill or be killed. If you're playing alone, there are other, better titles with similar gameplay, but playing with a few friends over a LAN or the Net, *Scarab* ain't bad at all.

Rating: ★★

Sega Rally

Publisher: Sega

Developer: Sega

PC owners have waited a long time for the conversion of *Sega Rally*, but the port is somewhat disappointing. The soundtrack and sound effects are every bit as good as in the arcade, and the additions of IPX and TCP/IP support and split-screen are nice, but two players is still the maximum. Why no six- or eight-player LAN option? That should have been a natural addition to any PC racing game.

The gameplay is very much intact, and all four original tracks (one is hidden) also make an appearance. The major problem with the game is getting a decent frame rate out of anything but the lowest-res graphics modes. Unfortunately, Sega only used DirectDraw instead of also using Direct3D, so people with 3D accelerators can't get any boost. The 320-by-240, 8-bit display mode is fast, but detail levels seem lower

than the Saturn version. The 640x480, 16-bit is stunning, but frames drag by on anything lower than a Pentium 166.

If your heart is set on playing *Sega Rally* on the PC, it's still a decent game, but racing fans looking for some top rally action may be better served picking up a copy of *Screamer 2*.

Rating: ★★

SORRY!

No new games
were ready for review this
month on these systems

Macintosh

Arcade



Average graphics and routine gameplay do little to distinguish *Powerslave* from the crowd of other first-person shooters on PC CD-ROM

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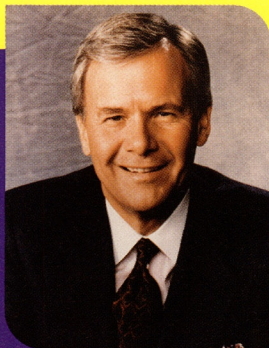
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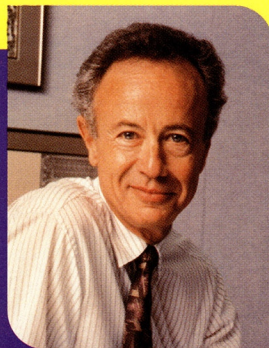
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Go postal

Next Gen has reported several times that the **Namco Museum**

collections use a "JAMMA emulator." For the record, JAMMA is a wiring harness standard, no more emulatable than a telephone cord. In addition, the games in the



We stand corrected: there's no such thing as a JAMMA emulator

Museum collections actually predate the JAMMA standard.

Rumor has it that the **Namco Museum** is actually an object-level recompilation, with adjustments made for the new target hardware. Others have reported pieces of the original game data within the executables on the CD, but no original game code, which seems to support this supposition. (At any rate, adjustments would have to be made for each game involved, as the hardware was not interchangeable among most of those featured.)

Maybe Namco's PR people would have more enlightening information on their techniques.

Jeff Vavasour
jeffv@digitaleclipse.com

Jeff wrote the emulators used in both volumes of *Midway's Arcade's Greatest Hits*, and he has written dozens of other emulators, so if

anyone would know, he would. Namco, how did you do it?

So, I see Senators Lieberman and Kohl resumed their crusade against videogame violence. My question is, are there not better things for senators to be doing with their time? I live in Senator Lieberman's home state of Connecticut. Our taxes are through the roof, our cities are nothing but gathering places for criminals, and many of the major industries in the state are shutting down as Congress continues to cut the defense budget. I guess none of this is as important as making sure little Johnny or Jessica can't get their hands on a copy of *Re-Loaded*. Although if Johnny or Jessica's parents work for any of the defense contractors in this state and are among the thousands laid off as government contracts keep getting slashed, they won't have any allowance money to spend on games anyway.

I am an adult and can buy any game I want to. I also vote, and believe me stamping out videogame violence is not what I consider a strong platform or one worthy of my vote.

Vinny
103527.1106@compuserve.com

Hear that Senator? And while we're at it...

What Senator Lieberman states in your interview regarding the effects of the violent content of videogames and TV does have some validity. There have been numerous studies on the effects

of TV content (not much of a stretch to apply these results to video games), and Lieberman's ideas about "reward" and role-modeling are supported by Behavioral and Social Learning theories. However, Lieberman and the social psychologists never mention one thing: Japan.

Japan's entertainment industry, from movies and comics to cartoons and videogames, are far more violent in content than those in the United States, but Japan has one of the lowest rates of violent crime. **NG** and Lieberman hint at a "bigger problem" that is harder to pinpoint, but that problem is more likely to be found within American society, not the content of our videogames.

Ferdinand Arcinue
farcinue@earthlink.net

Well put. The Japanese example would suggest that the impact of media is affected at least as much by one's cultural expectations as by the stimulus itself. Ever since the highly stylized Noh theater of the Middle Ages, the Japanese have believed that entertainment and reality are two distinct entities and that one doesn't affect the other. Japanese people have lived their lives that way. Perhaps it is time we expected more from our own culture.

I am writing to protest against videogame companies because they have forgotten about people who are deaf. Since companies started making CD-based games, voice tracks have become increasingly common, and now

people who can't hear what they're saying have to guess their way through the game. For example, take *Resident Evil*; it features a lot of spoken dialogue, and deaf people who can't understand what they're saying miss a great deal.

I want to know why programmers who make the games don't put captions at the bottom for people who can't hear. It's very easy to do.

C.J. Moreira
blackviper1@juno.com

This is an issue we've never had raised before, but quite a valid one. Thank you for raising our consciousness a little. Hopefully, some of the game designers who read **Next Generation** magazine are taking note.

I just wanted to point out an observation I had while reading your website the other day. Your site is the 20th most popular on the Net, yet it's authored and kept up with by only two people. I noticed how that's much like the early days of videogames. I remember in one issue you said something like, "Programmers these days are envious of the early ones, when one or two guys could easily make a game..." Well, right now there's hardly any multimedia on the web, and it's based more on content than on graphics. Do you think perhaps one day web programmers will look back on the late '90s the way game programmers now look back on the late '70s/early '80s? Just an observation.

Keith
cieth@informum.net

corresponding

An interesting question, as some other sites we could mention already have twenty-plus staff members. For the record however, *NG Online* is adding a much-needed third web author this month, and the Imagine Games Network as a whole is, as of February, the #1 ranked gaming site on the web. Don't applaud folks, come visit.

I'm sick of hearing people complain about the prices of Nintendo's N64 carts. Nobody forces you to get your games at the local Electronics Boutique. I don't care how "uncool" it is, but I get all my games at Wal-Mart. The prices at specialty stores, such as EB, are obviously going to be higher. The big retail stores can afford to price items lower, and in the case of N64 carts, it may be nearly 30% less. I can get new games cheaper at Wal-Mart than used games at EB! So please stop complaining and try shopping around.

Patrick Bass
mr.chuckles@juno.com

Your advice is good, and shopping around — even if it means going to Wal-Mart — is always a good idea. The problem, of course, is that no matter where you shop, N64 titles are going to be a good deal pricier than those for PlayStation or Saturn.

Now that the furor over the magazine's supposed system bias seems to have quieted a little, people have become incredibly watchful of the star ratings on games. If the stars are printed the wrong color or you suddenly change a game's ratings, people are up in arms about bias (again) and journalistic integrity.

Wouldn't it be much easier to just get rid of star ratings altogether? Instead of providing that visual summary, why not force the reader to create his or her own impression of the game from the very text of the review? At least then, people will have to consider the reasons your reviewers like or

dislike a game instead of just running around saying, "I can't believe **NG** gave X game X stars! They must be pandering to X system!"

I know this goes against every fiber of our modern "instant gratification" methodology, but I think that once you get past the glut of complaints about the absence of stars, you would find that people would actually consider the arguments presented in your reviews. Once they see a rating with which they don't agree, no number of valid points is going to turn them around. They will instead use it as fuel for their ranting, which, usually, ends up in the newsgroups.

There's no way to force people to read and to (gasp) think, but we can certainly push them in the right direction.

Travis Prebble
tprebble@efn.org

An interesting idea. Other than the fact it would instantly render the *Next Generation* "Gamer's Guide" totally useless, what does everyone think? Stars or no stars?

You missed one of the fundamental reasons why retrogaming is so popular. It is something I call the cream-of-the-crop syndrome. The argument is simple: retrogames often come out ahead because people are comparing 100% of today's games with the top 5% that they can remember from 15 years ago. In fact, you yourselves suffer from this cream-of-the-crop syndrome.

You point out that *Frogger* and *Joust* are unique ideas, as opposed to the non-unique fighter clones, but how many clones of these single, unique games flooded the market shortly after? I don't know how many *Pac-Man* clones there have been in the last 10 to 15 years, but I am sure it is in the hundreds, including dozens produced by Namco themselves. (*Baby Pac-Man* anyone? Ugh.)

Also, we must remember that for every good arcade

game, there was a really awful translation to an underpowered PC. Can anyone remember



Joust and Frogger may be old, but they are definitely good

playing Sega's *Outrun* on a Commodore 64? I giggle just thinking about it.

Christopher Woodill
cwoodill@interlog.com

Good observation, but we'd still rather play *Pac-Man* than *Killer Instinct*.

With all the clamor of late concerning games that lack originality and good gameplay and the current resurgence of older games that may not have graphical prowess but are based solely on gameplay and fun, one might wonder why the industry hasn't picked up on this. In my personal opinion, the industry cannot be blamed for the influx of lousy but good-looking games. Blame the people who buy every single 3D fighter, no matter how bad it is. Blame the people who own 15 identical *Doom* clones with different names. I work in game store, and these games always sell very well, almost regardless of their quality.

People seem to have forgotten what makes a game good. Now most people think a high polygon count or frame rate is all you need. My only hope is that others like me put Sony's Yaroze to good use, and that perhaps the other systems will offer something similar.

The good days of gaming are over, and they won't be back anytime soon.

Oliver Streuli
Boston, MA
ostreuli@earthlink.net

A rather bleak outlook, but not without merit. As gaming reaches a larger segment of the market, perhaps it's inevitable it will go the way of movies and television: a sea of popular products with flashy production values and little depth, and only occasional worthwhile titles. Opinions?

You are quite possibly the best magazine of all time, but I would like to comment on the use of the phrase "best so-and-so of all time." Ever since *Mario 64* came out (the best game of all time, you said), it seems that everything is suddenly the best this-or-that of all time, at least "possibly" the best.

This month's cover says that *Super GT* is the "best arcade auto-racing game of all time," and page 126 says that *Fighters Megamix* "is the best fighting game ever on a system that's already chock full of great fighting games," and I haven't even read the whole issue yet, although I'm sure it's probably the best issue of all time.

Now, although this phrase is probably the best phrase of all time, it's starting to lose its impact a wee bit. Why not start taking bad games, like *Dragonheart*, and call it "the best bad game based on a movie about dragons of all time!" Or "the best game of all time to get only one star and appear in this issue" (which is the best issue of all time, by the way).

I hope you see my point, which is quite possibly the best point of all time. Incidentally this letter contains all the elements of possibly being a front runner for the distinction of being the best letter of all time, maybe.

J. Hough
jhough@ax.com

Hmm, it seems making this the spot for "Sarcasm Corner" was a pretty good idea — or the best idea for letters ever. Still, point taken.



Next Month

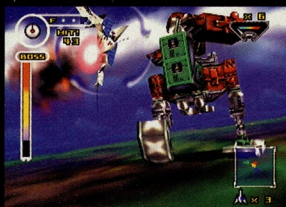


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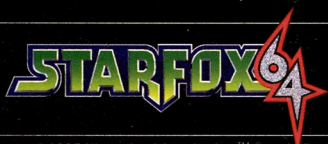


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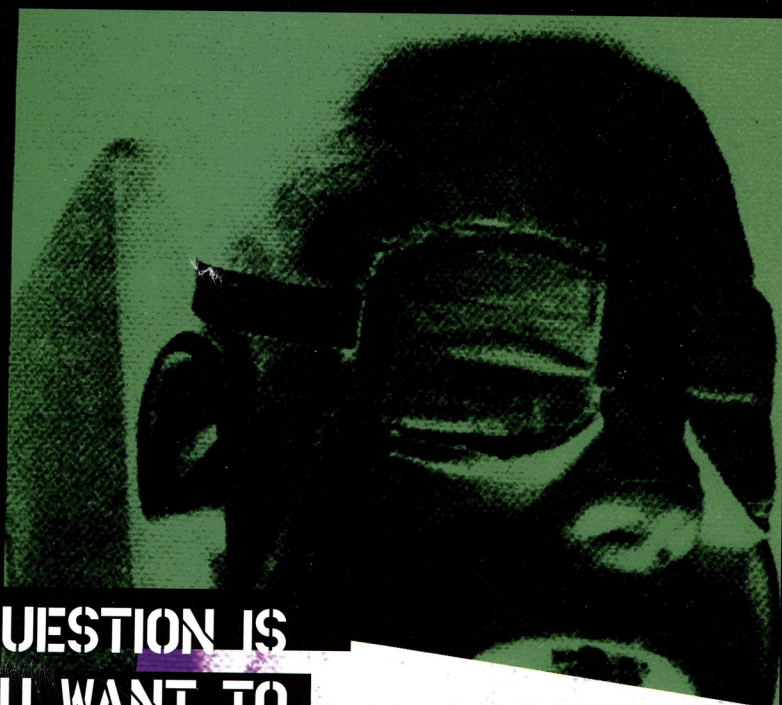
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